



UPPSALA STUDIES
IN EDUCATION 27

Gertrud Grahn

Educational Situations in Clinical Settings

A Process Analysis

ACTA UNIVERSITATIS UPSALIENSIS

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Abstract

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Swedish nursing education is in a phase of change. New goals state a professional nursing practice implying that student nurses are trained to act and improve patient care by virtue of their researchbased knowledge and skills.

For a practice discipline the target for change is the world of work. Aiming to bring nature and meaning of educational processes to conceptual awareness, the empirical part of the dissertation is focusing professional development in specific clinical settings. Patterns of interaction have been observed and educational processes qualitatively analyzed.

Methodologically the constant comparative analysis for generation of grounded theory has been used. The pros and cons of using the approach for analyzing processes in this study are discussed.

The findings, in terms of generated categories, point toward educational traps which students encounter. Educational processes occurred in a supporting climate but the situations were "capricious endeavors" as to (a) educational continuity, (b) assessment of the student's readiness, (c) challenges, and (d) exposure to a researchbased nursing practice, where the patients individual needs are assessed.

The existing vs the desired in clinical practice is discussed in terms of preconditions for change from "knowing how" to "knowing that" and in terms of emphasizing goals for higher health care education, out of reach for achievement within time available in clinical settings.

Generated working hypotheses put to the fore that what would change the "capricious endeavor" to a "crowning endeavor", is not only to (a) articulate and recognize the richness embedded in skilled nursing activities but to (b) utilize the supporting tension hidden in the discrepancy between the existing and the desired as a point of departure for the pedagogical practice. In that process aimed to unite the changed nursing education to nursing practice in developing professional proficiency and scientific awareness, the staff nurse, acting in and educated for the preceptor-role is the key person. It would make a difference if the new goals of holistic patient care and researchbased nursing practice were articulated and recognized by practitioners as work relevant. Professional nursing practice - implying holistic patient care - with its demands on ability for using diagnostic reasoning for making clinical judgments and decisions thus would be core features permeating educational processes.

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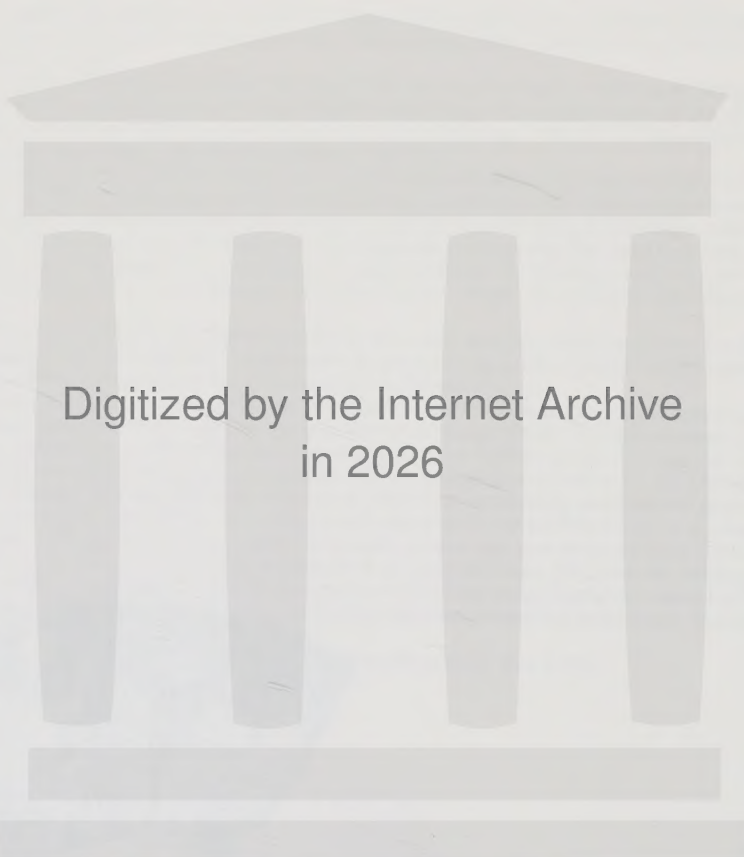
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To EVA

for "...roots and wings."



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While moving from principles to practice, nursing students spend half of their educational time in clinical settings. The strengths and weaknesses of clinical experiences have always been a central question among health care educators. Since nursing education today is being transferred to the system of higher education in Sweden, the question gained a new dimension which totally caught my interest. What precepts are guiding and could guide educational endeavors in clinical settings?

Through the years many persons have contributed to the formation of the precepts guiding this research endeavor. With deep gratitude, respect, admiration, and affection I remember those who knew the secret that "...you may light another's candle from your own without loss" and those who let me experience the wing-beat of true scientific enterprises molded by curiosity, rigor, stringency, and humor. With generosity, understanding, and consideration, all of you sensitively inspired, encouraged, and challenged me in the way you interacted.

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INTRODUCTION

Growth, change, and progress - dynamic words to describe knowledge advancement in educational endeavors - have always had the power to attract and to challenge educators to explore related phenomena and explanations or to describe the path of growth.

Potentials and limitations, significant external or internal factors for knowledge advancement, have been described and analyzed at individual and social levels. The weight, probability, and relevance given to the factors have alternated through the years. Varying ideological theories have made attempts to capture the phenomenon of growth and change related to features within the current social structure and order, organizational conditions, or individual differences. Because of these attempts, the view of education, its aim, its structure, and pedagogical consequences, have varied from ancient to modern days.

For some aspects of Swedish health care education, the concept of knowledge advancement recently has received new emphasis. In 1975 the Swedish cabinet presented a bill for reforms in higher education and the proposal was approved by the Parliament in 1977.

The research study presented in this report has its focus on a phase of growth, change, and progress within Swedish nursing education which, due to the educational reform, was transferred to the system of higher education. The planning phase lasted until 1982, and the reformed education is now being implemented.

By analyzing educational processes, the present study aims to highlight knowledge advancement and pedagogical practices when student nurses move from principles to practice in the clinical settings, and to assess the utility of the qualitative research method which was used to analyze processes in educational situations.

The reform of higher education (Högskolelagen <Higher Education Act>, SFS 1977: 218) and society's changed policy with regard to health care (Hälso- och sjukvårdslag <Health Care Act>, SFS 1982:763) called for extensive changes within specific educational programs. Examples of programs requiring such changes are those for general nurses, operating room nurses, medical radiological technicians in specific disciplines such as diagnostic radiology and radiation therapy; and, after 1984, designated nurses in general health care nursing, nurses in operating room nursing, nurses in diagnostic radiology, and nurses in oncology.

As was true before, the educational program should prepare students for functions in the world of work, but transfer to the system of higher education required a change in content and methods as stated in the curriculum of The National Swedish Board of Universities and Colleges (Utbildningsplan för Hälso- och sjukvårdslinjen, 1981).

The described aims in the study program are built on:

- (a) The directions given in the Higher Education Act (1977) regarding a scientific-based and research-linked education (educational political aim).
- (b) The directions given in the governmental proposition regarding higher education for health care (1978/1979:179) in which, from an ideological point of view, the concepts of health and holistic patient care are emphasized (health care political aim).

Thus, the aim of the reform requires that health care education now shall:

- * Attain a scientific dimension, a characteristic of higher education, and prepare students to participate in research and developmental work within the caring domain.
- * Mediate a view of human beings which provides more opportunities in the psychological and sociological aspects of patient care.

The knowledge advancement reflected in the educational aims implies that nurses of tomorrow in their world of work are able to identify, evaluate, and judge alternative activities, to make independent decisions about complex patient care problems, and to do so by virtue of their research-based knowledge and skills. Thus, science and approved experience will provide the basis for developing academic professional behavior and contributing to better patient care.

For this type of knowledge advancement to occur, several preconditions and consequences exist. Legislation only provides the direction for implementing reform intentions. Preconditions and educational consequences are seldom taken into account at the level of political reform. These matters are of concern for subsequent planning and change. To be successful, change and renewal should be closely related to potentials and limitations i.e. preconditions for change. The preconditions to be explored (e.g., House, 1979; Kohlberg, 1981; Fullan, 1982; Sandström & Ekholm, 1984) include the following:

- Analyze the need for change.
- Determine whether space is available for change and renewal.
- Analyze the cost-benefit of change.
- Explain why a higher stage is more adequate and better.
- Firmly establish the reform intentions among those who are expected to implement them and determine whether there is a readiness for the change process.
- Give a concise picture of "how it really is" (perhaps the most important precondition), so that change and renewal can be carried out systematically. "Shooting from the hip" is often combined with low target precision.

An attempt to concisely reflect preconditions for change and renewal is jeopardized by the fact that potentials and limitations for implementing an educational reform vary greatly at the individual as well as the social level. Preconditions can also be static or dynamic. They can, in other words, be described and be well-known, but they can also be unanticipated and formed instantaneously.

Preconditions are hard to determine, and most are developed during discussions for planning curricular changes in classroom teaching. In the dynamic area of patient care settings, in which student nurses encounter reality, preconditions for change are discussed less frequently. If the sentences above regarding preconditions to be explored are transferred to questions regarding preconditions in the clinical settings, the average answer would be "no".

It thus became an irresistible challenge to approach health care education in clinical settings, to look at what characterized the educational situations, and to do so by using a research approach which paid due respect to what occurred in the situations, and to analyze the occurrences regarding their connection to phenomena conceptualized as *holistic patient care* and *professional nursing practice*.

--OOO--

In **PART I** the **CONCEPTUAL FRAMEWORK FOR THE EMPIRICAL STUDY** is outlined and the **AREA OF INQUIRY** delineated. The background and frame of reference are presented in Chapters 1–3. In the first two chapters concepts such as: *Health - holistic patient care - professional nursing practice* and *role development in clinical settings* are presented.

The third chapter comprises considerations, evoked as the research progressed, regarding concepts such as: *Educational processes* and *competence development and formation*.

The concepts jointly provide the referential framework for discussing the findings of the study.

Aims and structure of some **SWEDISH HEALTH CARE EDUCATION** programs before and after the educational reform are given in **CHAPTER 1**. Stated goals for **HEALTH CARE** education and for **HIGHER** education today, i.e. goals for health, holistic patient care, and professional nursing practice are thoroughly presented. Reflections are added by comparing the development abroad in this area.

The health care education curriculum in Sweden is divided into a college-based and a clinically-based portion. **CHAPTER 2** is headed **CLINICAL SETTINGS** and highlights **ROLE DEVELOPMENT** in one kind of complex patient care setting in the clinical-based portion. Activities in teaching-learning situations, where the student

nurse is trained to apply attained knowledge and skills supervised by a preceptor in the field of practice, are described.

Often discussed is the discrepancy between the college-based part and the clinical-based part. Faculty members stress what students "ought to be" and hospital staff members in the preceptor role are more concerned about what students "ought to do". The dichotomy is reflected and related research findings are presented in the chapter.

In **CHAPTER 3** some **CONSEQUENCES** for **PEDAGOGICAL PRACTICE** are outlined. A structural/functional model drawing on cognitive-developmental theories and learning models, in which development and formation are regarded as stage movements or loop movements, is considered. Competence development and formation are presented in terms of changes in the cognitive, affective, and moral domains.

Teaching-learning is discussed from the view of educational theories, and models which emphasize the active role of the student in a context where experiences, conducive to learning, are provided. Educational processes are considered as situations of interaction in which observed activities could be interpreted as having representative and/or intentional meaning.

In **CHAPTER 4** the **PROBLEM AREA** is delineated and the **AIM** of the study presented. It is stressed as a necessity to investigate in what way the *educational processes in clinical settings* influence *competence development and formation* toward the changed goals and the changed *role* - toward *holistic patient care* and *professional nursing practice* - when student nurses are moving from principles to practice within the health care field.

To focus on and interpret the meaning of educational processes demands a strategy which allows the researcher to perceive the complexity of occurrences in a multi-dimensional perspective. Different kinds of naturalistic inquiry modes are discussed.

The *aim* outlined comprises:

- To delineate and analyze activities in educational situations in clinical settings.
- To conceptualize core features of educational processes.
- To identify facilitating potentials and constraining limitation that govern activities in educational situations.
- To generate working hypotheses regarding educational situations in clinical settings having the potential to enable students to move toward professional proficiency.
- To assess the utility of one qualitative research approach (highly recommended but seldom used) for process analysis of educational situations in clinical settings.

PART II comprises **PLANNING AND ACCOMPLISHMENT** of the **EMPIRICAL STUDY**.

The **RESEARCH STRATEGY** - Constant comparative analysis for generation of grounded theory - used for data collection and data analysis, was developed by the sociologists Glaser & Strauss. The research design uses a technique of purposive sampling of teaching-learning situations in the clinical settings. Aspects of activity, discussed by the philosophers Dickoff & James, were used in the beginning of the study as a sensitizing device. The research strategy and the aspects of activity are presented in **CHAPTER 5**.

To capture the essence of clinical training, **EDUCATIONAL SITUATIONS** were chosen where time available for interaction with the patients was limited and where the patient's emotional distress is presumed to be high. Corresponding to that kind of situation are encounters at radiation therapy departments within hospital oncology units where patients are diagnosed and/or treated for their cancer disease.

In order to maximize the credibility of research findings, comparisons have been done. One part of the study was carried out in Sweden and one part in the USA. Teaching-learning situations in different educational programs and student-preceptor activities at different educational levels were observed. The educational situations and students involved are presented in **CHAPTER 6**.

In **CHAPTER 7**, the **ACCOMPLISHMENT** of the study is reported. The investigation was carried out as an ethnographic observational field study. Interrelated individual and contextual factors in educational situations have been identified, analyzed, compared, and coded for concept formation.

Described in Chapter 7 is also the researcher's role of participating and observing in the field where preceptor/student /patient activities occur and so is the researcher's role of utilizing existing knowledge. Some examples of how the research process progressed are provided. Two cases are presented in which the structuring of field notes into sequential units and the different coding procedures are illustrated.

The **FINDINGS** from the teaching-learning situations that were analyzed and compared are **DISCUSSED** and **CONCLUDED** in **PART III**.

In **CHAPTER 8**, the **FINDINGS** of the **EMPIRICAL STUDY** and some **CONCLUDING CONSIDERATIONS** are reported. Emerged codes regarding recurrent activities in direct and indirect teaching-learning situations are described as well as the core concepts or categories that were analytically abstracted.

It was also decided to assess the utility of using a qualitative, naturalistic research approach to capture the essence of complex educational processes in clinical settings. The validity and reliability of the **METHODOLOGICAL APPROACH** is discussed and the pros and cons of using the method of constant comparative analysis for generation of grounded theory in this study are outlined in **CHAPTER 9**.

Finally, in **CHAPTER 10**, the findings reported in chapter 8 are **DISCUSSED** in light of the conceptual framework presented in Part I.

Competence development and formation in accordance with reform intentions was discussed in Part I in terms of changes in cognitive, affective, and moral domains and was illustrated with a model. Throughout the study the model was elaborated. Changes in competence are discussed in Chapter 10 in terms of changes in a *conceptive thoughtful component* and an *emotive human component*. Professional nursing practice, implying holistic patient care with its demands on ability for using diagnostic reasoning and for making value-based clinical judgments and decisions, is related to the model.

The categories of observed educational situations generated in clinical settings thus through the elaborated model of competence development and formation highlight some *educational traps* and some potentials and limitations for change. It is questioned whether or not the curriculum for higher education in health care is emphasizing development toward goals out of reach for achievement in clinical settings.

The **WORKING HYPOTHESES** are presented, putting into the focus the crucial role clinical settings play for change and renewal in Swedish health care education and thus for developing professional nursing practice.

PART I

AREA OF INQUIRY AND CONCEPTUAL FRAMEWORK FOR THE EMPIRICAL STUDY

“The relation between objects as known and objects with respect to value is that between the actual and the possible. The actual consists of given conditions; the possible denotes ends or consequences not now existing but which the actual may through its use bring to existence.”
(John Dewey)

1 SWEDISH HEALTH CARE EDUCATION IN A CHANGING PHASE

As was mentioned in the introduction, the reform of higher education (Högskolelagen <Higher Education Act>, SFS 1977: 218) and society's changed policy with regard to health care (Hälso- och sjukvårdslag <Health Care Act>, SFS 1982:763) called for extensive changes within specific educational programs. As before, the educational program should prepare students for functions in the world of work, but transfer to the system of higher education required a change in content and methods as stated in the curriculum of The National Swedish Board of Universities and Colleges (Utbildningsplan för Hälso- och sjukvårdslinjen, 1981).

Section 1.1 will, in a general way, describe how the reform has changed the aims and structure in some areas of health care education in Sweden. In the next section (1.2) the aims for nursing education of today are highlighted more specifically and provide the first piece of the conceptual framework with regard to *health*, *holistic patient care*, and *professional nursing practice*.

1.1 Structure and aim for health care education

1.1.1 The years before the educational reform

Health care education in Sweden was previously at the secondary school level (hospital based programs, diploma programs) and was administered by county councils, local governments, or private management. The length of education varied from 2 to 3 1/2 years. A detailed curriculum was worked out at the governmental level and regulated the subject matter to be taught.

Before 1960, nursing education was the dominant area of health care education. During the last year of education, the nurse was able to choose a specialty, e.g. midwifery, child care, surgical care. The choice could also include work in the operating room, laboratory, or as a nurse in diagnostic radiology or radiation therapy after this specialty started in the early 1960's.

Powerfully expanding and rapidly accelerating medical technological development and progress during the 1960's increased the need for personnel with special training and more extensive knowledge in the natural sciences and technology than could be

included in nursing education. Shortages of nurses were prevalent, and it was becoming more and more difficult to recruit nursing students to the technically based specialties (SOU 1962:4).

In order to keep pace with the medical-technical progress which required a wide range of different skills and knowledge, new complementing educational programs were started. It was decided to separate some of the specialties within nursing education and to begin new educational programs to develop competence for tasks within laboratories (laboratory technicians), within operating rooms, and within radiological departments (surgical assistant, radiographer in radiodiagnostics or radiotherapy, or medical technical assistants became their common names in Sweden). Thus, the demand for a solid basis in natural sciences could be met for the kind of health care which diagnoses and treats patients with different diseases using medical-technological equipment. It was also possible to recruit entirely new groups of technically-minded students.

Developments in Sweden occurred in accordance with prevailing circumstances abroad where medical-technical tasks had long since been carried out by medical-technically-educated health care personnel. The extreme proliferation of medical-technical programs reported from the United States in the 1960's was, however, not found in Sweden (National Commission on Allied Health Education, 1980; The Future of Allied Health Education, 1983; Harrison, 1984).

In the years just prior to the educational reform, nursing education in Sweden was mainly managed by the county councils, whereas medical technical assistants enrolled in courses managed by the local government authorities. The different programs all extended over 2 1/2 years. The usual requirement for admission was to have completed nine years of compulsory school. Although many students were admitted from two- or three-year upper secondary schools, the educational program had its starting point at the school providing eligibility (Figure 1.1).

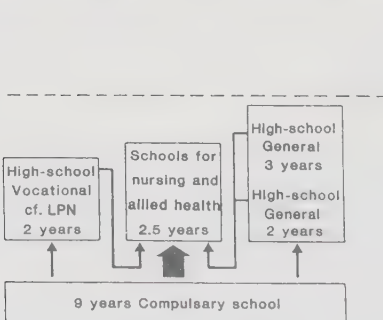


Figure 1.1
The educational structure
before the educational reform.

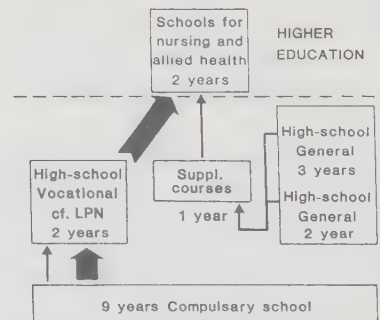


Figure 1.2
The educational structure
after the educational reform.

Health care education before the educational reform was directed toward basic competence for different functions within health care. This competence guaranteed that the nurse or radiographer could take part in the examination, care, and treatment of sick people in different situations with skillfulness, knowledge, and consideration.

The aim, which by that time referred to basic health care education, required that educational situations be mainly directed toward dexterity training because of the short period of education (2 1/2 years). The curriculum was detailed and regulated situation-specific content. By alternating theoretical classes and clinical practice, students were taught to master health care as technique and art usually related to specific medical prescriptions. Approved experiences, practical knowledge, traditions, and established routines provided the framework for building knowledge.

1.1.2 After the educational reform

The reformed educational program illustrated in Figure 1.2, requires two years of study (80-90 points) at colleges administered by the Swedish county councils. To be eligible for admission, a two-year health care education in high school or similar course of study (cf. the enrolled nurse in the UK or the licensed practical nurse <LPN> in the USA) is required.

The educational aims, outlined in the curriculum for higher health care education by the The National Swedish Board of Universities and Colleges (1981), give direction for the development and formation of study programs at a local level. After two years of study, the student is qualified to register as a nurse in different specialties.

The two years of higher education are divided into three courses:

- | | |
|-------------------------|---|
| Course A (10 points) | Joint courses for all specialties.
Content: Behavioral and social sciences. |
| Course B (30 points) | Similar courses for all specialties.
Content: Medical and health care directed. |
| Course C (40-50 points) | Different courses for each specialty within <ul style="list-style-type: none">- general nursing - psychiatric nursing- ophthalmologic nursing - operating room nursing- diagnostic radiology - oncology (radiation therapy) (incl. nuclear medicine) (incl. nuclear medicine) |

Approximately half of the time in courses B and C is spent in practical training in clinical or public health care settings.

Education for functions within special units such as departments for diagnostic radiology and radiation therapy thus has been brought back to its origin in nursing. The students observed in this study are students in radiation therapy departments. Mobility for health care personnel has been presumed to be easier

because of the similar content in courses A and B. However, at the same time mobility is impeded, since the problem from the 1960's of recruiting applicants for the technically-based branches has re-occurred. To balance the demands for specialty and integration is a difficult task (Grahn, 1985).

In the high school program, the students have developed basic knowledge and skills in the care and treatment of patients. Within the time-frame of the next two years, it is presumed that knowledge and skills will be raised to a higher level as well as being deepened and broadened. In addition, the scientific dimension, a central feature of basic higher education, is added. Attitudes and values are enhanced so that students in all situations are able to plan and care for the individual patient from a biological-psychological-social point of view.

In the areas of diagnostic radiology and oncology (radiation therapy) the time-frame of two years also shall include natural sciences and medical technology. Rarely does the preparatory high school education deal with subjects such as physics, mathematics, and technology (Lgy 70, Vård 1983). The same applies to the first year of health care education in college. For these students, the last educational year includes basic educational training in a more or less new subject area. Such an educational structure is almost unique in the world. It is extremely unusual for education within the technical health care area to combine 3/4 health care, behavioral, and social sciences in the first part with 1/4 natural sciences and medical technology in the last part (cf. The College of Radiographers <UK>, 1979; The American Society of Radiologic Technologists, 1980; Akademie voor Gezondheidszorg <The Netherlands>, 1984; Laurer, 1984).

In the curriculum Sections 2 and 4 (Utbildningsplan för Hälso- och sjukvårdslinjen, 1981), goals and methods for educational endeavors are described based on decisions and directions outlined in the introductory section, where the Higher Education Act from 1977 and the Parliamentary resolutions related to health care education (1978/79:179) are quoted.

As mentioned earlier, the aim of education is that students develop basic competence to practice health care within clinical or public settings. What has been changed - the new dimension of the competence - is expressed in the curriculum (Utbildningsplan för Hälso- och sjukvårdslinjen, 1981) in sentences such as:

- be prepared for research and developmental work.
- (content) based on scientifically grounded theories and experience and built on actual research and developmental work.
- active search for knowledge.
- critical thinking and problem solving.
- training in scientific methods.
- knowledge regarding the impact of poor health and illness on basic physical, psychological, and social needs.
- a holistic view of human beings.

- meet with people in crises.
- be stimulated to feel insight, empathy, and respect for the individual patient's situation.
- judge needs, carry out, and be accountable for actions taken.
- make independent decisions.

Health care education differs from other higher education in the following ways:

- (a) By directly educating for competence and for licensure to practice with responsibility for the care and treatment of other human beings.
- (b) By combining teaching and learning in classes with teaching and learning in clinical institutions or primary health care settings.

Throughout their education students alternate between classroom and practice situations which are characterized by different conceptions of educational aims. Practice situations seldom have a job description which is congruent with the competence goals stated in the educational aims (Lundh & Mogensen, 1980). Normative criteria for professional work performance (how it "ought to be") are given different emphases than criteria related to concrete caring situations (how "it is"). The difficulties in attaining congruence between classroom situations and practice in clinical settings is an old and well-known problem which, in recent years, has been described and analyzed by several researchers within nursing education (delineated in Section 2.2). All writers stress the importance of further research in the area. Reported investigations are mainly carried out abroad, but discussions of Swedish health care education indicate that the situation is the same in Sweden.

The educational structure for clinical practice is similar before and after the reform. During a phase of change and renewal, existing incongruities are accentuated. Implementing new aims thus could be a concern for teachers and students in classroom situations but be of no relevance for educational endeavors in clinical practice. A reform of the higher education system without reform in clinical practice will not have the intended consequences for the future of health care nor will it enhance the development of professional nursing practice.

1.2 Holistic patient care and professional nursing practice

The reform of Swedish higher education in 1977 coincided with reforms within the health care field. This is distinctly reflected in the curriculum (Utbildningsplan för Hälso- och sjukvårdslinjen, 1981). As was mentioned in the introduction, the changed aims could be grouped into two categories:

- An educational political aim related to education within the system of *higher education*.
- A health care political aim related to education within the area of *health care*.

The curriculum summarizes the directions given:

- In the Higher Education Act (1977) regarding a scientific-based and research-linked education for *professional nursing practice*.
- In the governmental proposition regarding higher education for health care (1978/1979:179), in which the concepts of *health* and *holistic patient care* are emphasized.

The knowledge advancement reflected in the aims implies that nurses of tomorrow in their world of work will be able to handle complex patient care problems and to do so by virtue of their research based knowledge and skills. Thus, science and approved experience will provide the basis for developing an academic professional way of acting and contributing to better patient care.

1.2.1 Aim for education within the area of HEALTH CARE

As with other countries around the world, the Swedish public health care system is remolding its organization as well as its policy. The concepts of health and illness are being re-evaluated. In the spirit of the World Health Organization (WHO), proclaiming "Health for all by the year 2000" at the Alma-Ata Conference in 1978 (WHO Alma-Ata, 1978), the health concept has come to the fore.

In 1946, WHO defined *health* as "a state of complete physical, mental, and social well-being, not merely the absence of disease or infirmity". WHO's perspective on "health for all" is broad in proclaiming that a fundamental condition and prerequisite for promoting health and improving health care is the reduction of inequalities related to food and water supply, decent housing, social justice, peace, and education.

Specific health-related aspects, such as lifestyle, environment, and health care are, however, also discussed (WHO 1986) and more directly expressed in policy statements for change as in the Swedish health care system. Stressing improvement in public health requires a political change of course leading to extensive re-organization. The concept of health is emphasized in the Swedish Health Care Act (SFS 1982:763). The Ministry of Health and Social Affairs has presented a proposal within the project, "Health care in the 90's", abbreviated HS 90 (SOU 1981:4), relative to the guiding principles for the reorganization of health care in Sweden.

Changes in society have contributed to the above, and factors usually mentioned (e.g. Hultstrand, 1982) are:

- Increased numbers of elderly people which places new demands on health care activities.
- Advancements in medical and technological research and development which increase the likelihood of early prevention, diagnosis treatment, and rehabilitation.
- Increased consumer awareness, resulting from the availability of education and

information regarding health-promotion and health-preservation, creates new demands on readiness to meet the general public's varied needs for health care.

Within Swedish society, policy statements related to improvement of public health are conceptualized in terms of preventive care, primary health care, home care, continuity of care, and information about health-promoting and health-preserving factors. The importance of developing and using each person's health potential as a resource is also stressed.

It follows from the WHO definition of *health* that bringing together and integrating physical, mental, and social well-being creates the image of a whole person within the context of that person's situation. The concept of *holistic care* is today's "word of honor". In providing competent treatment and care, this concept is used as an ideological umbrella for activities which are carried out with empathy, respect for the patient's integrity, and due attention to the patient's need for security.

Holistic care thus defined is, however, scarcely a new aim for the health care delivery system. Patient-centered care has always been the target, and nursing activities have always been described as considering psychological and social factors as well as biological factors. In 1859, a classical book on nursing was published: Florence Nightingale's "Notes on nursing".

"Nightingale's proposals placed man within the framework of the natural world. The nature of man's environment was proposed to be a significant factor in recovery of health. Despite strong protests modern nursing was born". (Rogers, 1977, p. 30)

Abdella's "Patient-centered approaches to nursing" (Abdella, 1960) was published one hundred years later and is only mentioned as another example. From the Swedish nursing textbook most frequently used during the years 1945-1965 the following is quoted:

"One meets with many different kinds of people in all kinds of health care work, but everyone needs assistance in one way or another. Everyone has his torment, his troubles, and his anxiety for the future, and is by that extremely sensitive to words, gestures, and moods. It is important to show understanding, empathy, and interest in everyone. It is a great art to manage and to be sufficient in showing personal interest in a frequently stressing work situation. But where it exists, it will always in a special way mean encouragement and strengthening the zest for life in being a strong support to medical therapy - true as it is said, that a human being is a whole and not a bunch of details." (Giertz, 1961 <My translation>).

Patient-centered care, or holistic care, seems, however, to be an aim that is hard to reach. In the debate-book "Vi sjuksköterskor anser..." (We nurses think...), published in 1968 (Asplund, <Ed>), one could read sentences regarding patient care which still have significance.

The concept of holistic care as an aim for health care activities thus can be traced far back in time. In a discussion of the aims for nursing research, Bärmark *et al.*(1983) suggest that one aim of great importance is to reshape the perspective of holistic patient care. This aim has been lost due to specialization and bureaucracy.

The explosive development of specialization due to achievements in the field of biomedical and technological science after World War II, resulted in the patient becoming an object of medical technology. It is, however, important to remember that the new tools for examination and treatment contributed to developments in patient care. Diagnostic methods were refined, and possibilities for treatment and cure of serious diseases increased with the utilization of such methods as radiation, dialysis, and respirator therapy. These developments led to more people living longer. The 1960's gave "years to life". During the 1980's the focus is on giving "life to years".

Since patients are the precondition for health care, their central position is unchanging even though perspectives, aspects, and values change. The patient can be perceived as an object in surgery, radiation, or x-ray examination, but also as a subject when expectations, experiences, or conceptions are considered. Figure 1.3 illustrates different ways to look at the phenomenon.

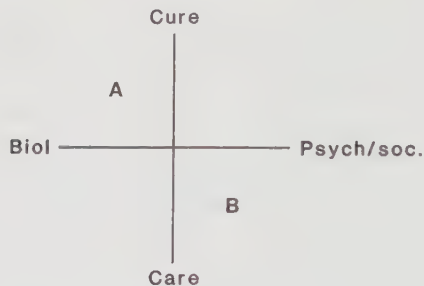


Figure 1.3 Object and subject for patient care.

Perception of a patient as an object (A in Figure 1.3) can exclude or complement perception of a patient as a subject (B in Figure 1.3). Logical and rational decisions and values regarding cure and care can diverge or converge.

Thus, how the concept of holism is defined and used becomes an important question that brings other questions regarding multiplicity vs. unity and fragmentation vs. integration to the fore. When judging the patient's needs and deciding on health care activities, holistic care can be perceived as the sum of the parts, i.e., the sum of biological, psychological, and social factors. For others, this is not holistic care -

holistic care is more than the sum of the parts. Two eminent scholars in nursing research, Rogers and Newman, express it as follows:

"A description of biological man (or psychological man) no more describes the human being than a description of hydrogen and oxygen describes water. The properties of a living system are clearly different from those of its components. ... (Man) is more than and different from the sum of his parts". (Rogers, 1977, p. 34).

"A holistic approach is not to be confused with, or construed to mean, a multivariate approach. It is not the summing up of many factors (psychological, physiological, social and so on) to make a whole. It is the identification of patterns, which are reflective of the whole."
(Newman, 1979, p. 70)

How to define and give concrete form to the concept has been discussed in an article by Dickoff & James (1970). The two philosophers have raised several questions about holistic care (total patient care) and values within health care. According to them, nurses constantly talk about giving total patient care, but the authors ask:

- What does the slogan mean in terms of realizable goals?
- Is it another version of respecting the uniqueness of the patient?
- How can we explain the persistence of patient uniqueness as a value in nursing?
- Are the patients' needs so unique?
- Do we need to put psychiatric elements into all nursing practice?
- Is it only an awareness that people when sick need special mental or emotional support?
- If we need to give such support, are there no procedures that can be spelled out and passed on through education?

According to Dickoff & James, what is needed is

"...to see to, that all beliefs and values, whether hoofed or mouthed become headed - that is are brought to conceptual awareness." (Dickoff & James, 1970, pp. 421-422).

The quoted article was written several years ago, but is of current interest in emphasizing the need for defining the concept of holistic care in order to make communication regarding an educational aim possible.

A one-sided emphasis on the concept of holism can result in ignoring the interplay between the whole and its parts. The part is not only a fragment, the part can also be a whole. In discussing that interplay, Lindholm (1985) speaks about wholeness at different levels. A unit, perceived as a whole in one context, is a part in another context. The molecule is given as an example. It is a part of the cell, but a whole in relation to its atoms. Lindholm argues that increased knowledge about the part shall not only be perceived as a fragmentation of knowledge, it is also an important contribution to the changed image of the whole.

In general, recent decades have been characterized by a breakdown in concepts such as responsibility, consideration, respect, humbleness, etc. It is hard to imagine health care as an isolated island unaffected by trends in society (Birath, 1981). Within areas requiring feeling, insight, and empathy, manifestations of the breakdown will be more obvious, and could be perceived as loss of the holistic view on the part of the care-giver.

A new view is also developing with reference to the care-giver. To consider the psycho-social work environment, i.e., to have a holistic view of the care-giver, too, is stressed through legislation in Sweden (SFS 1977:116). Other conditions, such as demands for regulated hours of work, better salary conditions, social advantages, expanded influence on work situations, etc. have also had an influence.

The "new rules of the game" phenomenon, sometimes classified as a paradigm shift, is spreading like ripples on a water surface and seems to forecast a new age (Fergusson, 1980). The swing of the pendulum to an emphasis on holistic patient care is related to a general shift in the value system which gives increased attention to psychological factors in many kinds of interaction between human beings.

The health care political aim is outlined in the curriculum. However, it is not obvious what holistic patient care implies. Is it a question of developing the ability to identify patterns which are reflective of the whole according to Newman's earlier-mentioned definition, is it a question of giving patients individual psychological support in crises, or is it a question of increased kindness and improved service?

The aim for education within the area of health care shall be reached by introducing students to the behavioral and social sciences during Course A (10 points) and by developing that knowledge through Courses B and C. Since accreditation for teaching in behavioral and social sciences is not required (SOU 1980:3 Chapter 11) the nursing teacher/team of teachers mostly is/are responsible for the course.

Staff members in clinical settings functioning in a preceptor role are responsible for most of the supervision and education in the field of practice. They are not required to have any special preparation in education, which would allow for opportunities to instill aims, content, and methods. Thus, it is not clear in what way clinical practice will be affected by the health care political aim.

To support educational planning at the local level, The National Swedish Board of Health and Welfare published a booklet in 1981 on health care development. In the booklet it is established as fact that a considerable part of the education is carried out in the field of practice as an apprenticeship, i.e., students learn by observing staff members' activities. It is, however, concluded that during the phase of reform implementation, there are no role-models available from whom students can observe and learn (Socialstyrelsen, 1981).

1.2.2 Aim for education within the system of HIGHER EDUCATION

The aim of education is no longer merely to train and examine skilled and competent practitioners. Beyond general knowledge requirements, all areas of *higher education* explicitly aim to develop *academic ability*, i.e. an ability to understand the major subject's basic structure, concepts, and principles, and to develop scientific awareness. To be trained to make critical analyses, to judge, and to systematically find and solve problems are core features. Higher education should also contribute to developing a basic ability to make decisions and take responsibility within a growing area of professional competence. Making judgments and carrying out decisions in an uncertain, complex environment are core features of professionally skilled and competent practitioners (Shavelson & Stern, 1981).

The curriculum states that the teacher shall transmit content that is scientifically based and linked to research and developmental work. Concrete and abstract thinking shall be combined to carry out activities in concrete, complex caring situations. Such a development could be perceived as an attempt to professionalize health care workers. It is exactly this dimension of professional identity as a product of educational efforts that most nursing theorists consider a precondition for practicing nursing from a holistic point of view.

"Nursing's age-old commitment to human health and welfare has taken on new dimensions. -- People are at the center of nursing's purpose. The descriptive, explanatory and predictive principles that direct professional nursing practice are rooted in a fundamental concept of the wholeness of life." (Rogers, 1977, p. 34)

The word "professional" has been mentioned here. It is important to interpret and explain what the word covers in this study since the word is used in several ways and has different implications in different languages. With the exception of the compressed sentence "... a profession is the pursuit of excellence" (Plato), the abundant literature in this area often includes lists of the characteristics of a professional. Ever since Flexner (1915) described the qualities he thought should characterize a professional practitioner, many similar lists have been published. Some are summarized in Styles (1982) as e.g., Cogan, 1953; Greenwood, 1957; Goode, 1960; Taylor, 1968. Common to most of them is a description which agrees that *a professional practitioner* is characterized by

- (1) Practicing a service-directed profession that meets a specific need in society and in the interest of the public.
- (2) Having a long academic education within a specified area of knowledge, creating and utilizing this systematic knowledge in problem-solving, and achieving a specific competence by which he/she is especially suited to judge and make decisions independently within the area of competence.
- (3) Belonging to a professional organization which

- (a) unites members within a profession;
- (b) communicates scientific findings out of common values attitudes, and norms in a common language;
- (c) controls and regulates education and work performance according to a code of ethics and rules for legislation;
- (d) guarantees society the possibility to accept, have confidence in, and to approve of the professional performance.

Some authors stress that autonomy, as an outcome of long academic education, is an especially important criterion of professional status. In any case, it is an important issue when planning education for a group striving toward developing a professional status (Goode, 1960; Becker & Carper, 1966; Moore, 1970). Attitudinal variables, such as service orientation and commitment, are mentioned as core features for some professions. The practitioner's "sense of calling", as a criterion, is considered by Olesen & Whittaker (1968).

Whereas the literature regarding criteria characterizing the true professional practitioner is rich, Carpenter (1986) argues that information regarding the link between requirements of professional practice and education for professional practice is lacking. Research is also lacking on how educational endeavors are related to the process of professional socialization and regarding the way professional practitioners act toward clients. Diversity still exists as to how role models are influential in developing professional proficiency, a subject first discussed in the late 1950's and early 1960's in the classical works by Merton and by Becker (Carpenter, 1986).

Are there specific criteria *with regard to nursing* as a profession, or could the same measuring rod be used for all professions? The question is by no means new. According to Styles (1982), it has been discussed for such a long time that the energy thus consumed, if converted into electricity, would heat and light nursing schools for eternity.

Styles has scrutinized the process of professionalization within nursing in the United States and distinguishes between external and internal criteria. She lists (ibid., p. 53) as external criteria for nursing as a profession:

- Extensive university education.
- Unique body of knowledge.
- Orientation toward service to others.
- Autonomy and self-regulation.
- Code of ethics.

The author emphasizes, however, the importance of paying attention to internal criteria which must also characterize nursing as a profession. She coined the term "profession-hood" for:

- Commitment.
- Ultimacy of performance.

Styles argues:

"The professionalism of nursing will be achieved only through the profession-hood of its members." (Styles, 1982, p. 121)

Similar thoughts were apparent when Naeslund & Vrethammar (1964) coined the Swedish concept "yrkesmannaskap". They meant that personal qualities necessary for work performance could be grouped and labeled "working character". The combination of skilled performance and working character forms the "yrkesmannaskap".

The descriptions of "profession-hood" and "yrkesmannaskap" inevitably move thought to the health care political aim which demands feeling, insight, empathy, responsibility, respect, consideration, etc. A Janus-face becomes visible, showing at the same time professional distance and empathic nearness.

Among others, Hughes (1970) has discussed this balance between detachment and interest as a general professional feature and dilemma. This is similar to the varying balance between the universal and the particular in a profession and is related to the balance between theory and practice. He suggests a distinction between "professions in essence", which pursue knowledge to improve practice, and "professions by accident", which merely utilize practice to increase knowledge. He means that some occupations become professions by developing an intellectual interest, whereas others do it by becoming more practical (Hughes, 1970 pp. 375-386).

Autonomy, as a criterion for professional nursing, has been described by Donley (1979). She is looking at nursing in the future, and concludes that nurses of tomorrow will be appointed "... not for what they do, but for what they control, manage and decide".

Professional development of students within medicine is described in the classical work "Boys in white" by Becker *et al.* (1961). The authors argue that the student in clinical training should

"...view every each patient as an exercise in diagnostic reasoning and devote his effort to mastering this basic mode of scientific thought." (Becker *et al.*, 1961, p. 27)

The foundation for *professional nursing practice* has also been defined by Lysaught and by Carnevali as:

"...(Caring/nursing) focuses on the intellectual demands placed on the nurse and emphasizes the growth in her decision-making responsibilities." (Lysaught. 1970 p. 62).

"...(the) skillful use of the diagnostic reasoning process (clinical judgments and decisions) in identifying health-related problems." (Carnevali, 1984 p. 25)

Definitions of professional nursing practice, as seen in the quotations above, are the way in which the concept is used in this study.

Knowledge advancement and professional development are described side by side in the curriculum (cf. Section 1.2). The development of the care provider thus could be summarized in some of the concepts which education should aim to develop:

- Sensitivity and accuracy.
- Ability to solve proposed problems.
- Ability to identify problems.
- Ability to use diagnostic reasoning.
- Ability to make value-based clinical judgments.
- Ability to make decisions.

Ability to make value-based, clinical judgments and decisions based on diagnostic reasoning regarding complex patient care problems demands that the student's ability for analyzing and synthesizing and for dissecting and integrating be further developed.

1.3 Health care education in a changing phase - a comparison

The debate and reform-emphasis in Sweden in the 1960's stressed equal opportunities and broadened recruitment into higher education studies. This strongly influenced the decision to transfer health care education to the higher education system in 1977. The main intention of the reform was not to give the health care areas increased possibility to develop as a scientific discipline.

Abroad, the development of a body of nursing knowledge and of practitioners towards professional identity has been ongoing for a long time. The development in other countries, however, usually started with an awareness among leaders in health care practice and health care education. They recognized the developmental potential and worked hard to establish health care as a discipline in the academic world. The development in the USA, for example, is described in a 1954 doctoral dissertation entitled "Professional Education in University Schools of Nursing" (Harms, 1954). It may seem peculiar that the development in Sweden started so late and that the ideas, which were introduced 50 years ago in the USA, did not have enough strength to influence our comprehension of possible developments within nursing. It is hard to judge whether or not language difficulties or Swedish isolationism created the barrier against impulses from the USA and resulted in historic amnesia.

In Harm's dissertation, the aim for higher education within health care in the 1930's is described as follows:

"... should develop in the students the ability to reorganize their thoughts, feelings and emotions in

terms of worthwhile purposes; to approach problems with confidence; to recognize problems in the environment ; to organize the skills and knowledge necessary to solve them; to use conclusions to modify actions and to assume responsibility for results. Such a nurse would be better able to meet individual and community needs in the way of physical, social and emotional health." (Harms, 1954, p. 140)

During the 1930's, it was mainly nursing teachers and nursing administrators who obtained a university education. It was not until the middle of the 1940's, the author says, that the approach aimed

"...to prepare a better practitioner on all levels for the many different fields of nursing service; develop leadership ability and to produce self-reliant, self-directing, growing professional women. Not to produce more skilled nurses, but nurses who understand better what they are doing and are more capable of relating themselves and their professional work to the total social and cultural pattern." (Harms, 1954, p. 141)

Thus, the development in the USA provides an example of knowledge development which has grown and been formed creatively by the representatives of the profession. The primary forces for starting higher education were internal factors.

The efforts to develop the scientific knowledge base for professional nursing practice in USA is best reflected by looking at the changing educational structure of today. One of the most critical issues of the last decades has been that of reaching consensus regarding standards for professional nursing practice and thus regarding appropriate level and type of preparation. The "*entry-into-practice*" question has been discussed in terms of quality of patient care "... (which) will not begin to improve unless and until the required educational preparation for entry into nursing practice is at the baccalaureate level" (Fagin & McClure, 1976).

Though diploma programs still exist, and the two-year associate degree programs (A.D.) are gaining popularity, the direction for change is toward promoting four-year baccalaureate degree nursing programs, and toward developing a national plan for achieving the goals, proclaimed by the American Nursing Association, that a B.S.N. (Bachelor of Science in Nursing) be the entry level and foundation for professional nursing practice (Moloney, 1986). Nurses who, after the general basic four-year program, want to specialize in different areas should attend advanced educational programs at the Master of Science level. It has been suggested that only graduates of baccalaureate nursing programs should be called *professional nurses*, whereas nurses from two-year programs should be called practical or associate nurses.

This study has its focus on nursing education in oncology/radiotherapy, and the example, given in fig 1.4, illustrates one oncology nursing education program in the USA (1) compared to the Swedish education (2) and the ongoing experimental work in the area (3). In the USA a high school certificate is required to be eligible to enter a school of nursing at the university level and a B.S.N., implying four years education,

is required to be eligible to attend the two-year program in oncology nursing for competence as a Clinical Nurse Specialist in Oncology. In Sweden the specialization in oncology/radiotherapy partly is included in basic nursing education (dotted field).

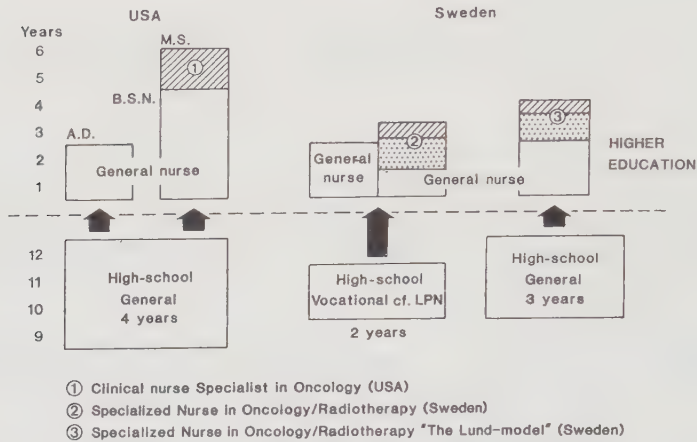


Figure 1.4 Educational program for the Clinical Nurse Specialist in Oncology in the USA, and the Specialized Nurse in Oncology in Sweden.

1.4 Summary

A "new" type of education within Swedish health care is developing. Due to the reform of higher education in 1977, the educational programs were transferred from the high school level to the system of higher education, and because of that were subject to radical changes. Nursing and allied health programs were merged into a 2-year nursing education program providing opportunities to specialize in different areas. To be eligible for admission, a 2-year health care education in high school or similar is required.

Up to the 1960's nursing education was the dominating health care education. The dynamic development within medical technology in the 1960's, however, made it difficult to provide a sufficient basis in natural sciences within the frame of regular nursing education. The more technically oriented training programs for functions within laboratory, diagnostic radiology and radiation therapy departments thus were separated from their origins in nursing and converted to allied health programs called medical-technical assistant programs.

This development in Sweden was quite in accordance with the development in other countries. Shortages of nurses and difficulties in recruiting nursing students to the technically oriented specialties were contributing factors.

As is true for all kinds of higher education, it is stated that the "new" educational program shall have a scientific basis and be linked to research and developmental work, train critical thinking and a scientific way of working, and prepare students at a basic level to participate in research and developmental work. These aims provide the basis for developing (a) a body of nursing knowledge and (b) a professional identity.

The educational reform coincided with a societal change in policy regarding health care which brings the concepts of health and holistic patient care to the forefront. The aims outlined in the curriculum are marked by these factors. When the aims are analyzed, something like a Janus-face appears, and the stated aims could at first sight be perceived as full of contradictions. On one hand the professional role is stressed, demanding abilities to analyze, judge, and make independent decisions which require knowledge monopoly and professional identity. On the other hand, the caring role is stressed, demanding a holistic view, shared decisions, and responsibility, flexibility and replaceability. If, however, the aims are regarded as integrating the art and science of nursing, the synthesis will be a highly desired aim for patient care developed by using the tools of a professionally educated practitioner.

Are then concepts like health, holistic care, problem solving ability and judgments new as aims within nursing education? The question must be answered in the negative. By nature, caring activities demand an ability to solve problems from a holistic perspective. The further development of that ability is, however, a precondition for a change of identity to a professional role.

Swedish health care education is in a changing phase. Looking at other countries, some of them have already been through that change. In the USA, for example, the question regarding professionalization within nursing was discussed as early as fifty years ago. Today it is proclaimed that a Bachelor of Science in Nursing (B.S.N.) should be the entry level and foundation for professional nursing practice.

2 ROLE DEVELOPMENT IN CLINICAL SETTINGS

In this chapter, another part of the conceptual framework is presented regarding educational situations in the clinical-based part of nursing education. The *clinical setting*, a setting in which students are confronted with the complexity of patient care, is perceived to be of great importance for *role development*.

2.1 The clinical setting in general

Higher education for health care professions as e.g. nurses and radiographers in Sweden is divided into

- a college based part (often referred to as THEORY) where the students are exposed to principles through lectures, instructions, seminars, discussions in classes etc.

- a clinical based part (often referred to as PRACTICE),

which provides the students with real life experiences in hospitals and similar institutions. The purpose is not only to practice and apply what has been taught in the classroom situation, but also to be reflective about patient care in real situations. The periods in the clinical settings are interspersed within the total educational program and provide opportunities to bring clinical experiences and new impressions to seminars and discussions.

Other concepts used are: abstract, didactic knowledge and experiences vs. concrete, applied, clinical knowledge and experiences, but most often the parts are referred to simply as THEORY and PRACTICE - implicit in health care. Sometimes the concepts are confusing since both concrete and abstract issues are to be found in theory as well as in practice. Benner (1984, p. 40) has named clinical practice "the hybrid of theory and experience".

The need for emphasizing a theory/practice dichotomy is due to the fact that the parts are separated in different institutions - the college and the hospital or similar institution. It does not, however, imply that theory and practice exclude each other in the two institutions. It is an easy way to distinguish between what is mainly taught in one institution and what is mainly practiced in the other (Figure 2.1). In the clinical context, where experience, exposure and training are important ingredients, it will become obvious whether or not the students have internalized the theoretical and practical knowledge which are presumed to have an impact on the activities performed in their interaction with the patients.

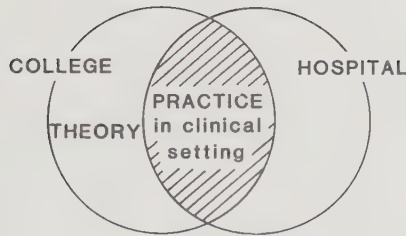


Figure 2.1 THEORY and PRACTICE in health care education .

It is stated that the core of any profession lies in its practice (Field, 1983) and thus the education in *clinical settings* is considered to be of special interest. The domain is, however, judged by Scandinavian researchers within the field for health care education to be insufficiently investigated (Eriksson, 1981, Johansson, 1983a), and in studies from other countries (presented in section 2.2) more research in the clinical area has been recommended. It has also been stressed as important to investigate, not only students' motivations, identities and commitments, but how they acquire knowledge, skills, attitudes and values necessary for professional practice (Carpenter, 1986). This study aims to contribute to that. It will focus on educational situations in the clinical portion of nursing education.

The situations in patient care settings to which the students are exposed are very dynamic components of the educational program. The variety of experiences is broad in relation to the kind of actual clinical setting - intensive care units, long term care wards, radiation therapy departments etc. - and to the kind of actual patient encounter - short, episodic, distributive, continuous, etc.

Most situations are of immense *complexity*, the events are often unpredictable and the activities dictated from different frames of reference. In the pattern of interaction between patient, staff, and student, all dimensions and levels of knowledge, skilled performance, values and attitudes can be found. The spectrum of illness, treatment, procedures, expectations, caring behavior, and coping mechanisms is broad. The patient's service needs are mingled with the student's learning needs. The expert and neophyte are working side by side. An uncharted experience for the patient is a daily routine for the staff. But the contingent situations give "the touch of real life", which students, when asked for their opinions, give very high priority.

Bucher & Stellingner have also in their study from 1977 shown that the organization of training (structural variables) and the supervision, relations and role modeling (situational variables) contributed to the development of professional identity and commitment among students (Carpenter, 1986).

When being socialized into the professional role, student nurses meet with staff members in guiding roles. The novice, guided and directed by the master, is an interactional phenomenon described throughout the history of mankind. This kind of interactional relationship is known to be the foundation for developing some of the human skills. Alternative paths are highlighted for the novice and "pieces of wisdom" are passed on to the inexperienced in different ways. It is a central issue for developing skills within the nursing domain, when student nurses move from principles to practice by meeting with role models in the clinical settings (Puetz, 1983; Hagerty, 1986).

The interactional relationship is a process of giving and taking, of teaching and learning. The activities can be distinguished as to scope and depth and can be differentiated as:

(1) Kinds of transmission. The activities could be structured or instinctive and intuitive, could be conscious or unconscious, could be process- or product-oriented, could be deliberate or unconsidered, etc.

(2) Kinds of relationship. The interaction could be continuous or episodic, could be formal or informal, could be assigned or accidental, could emphasize emotional or intellectual growth, could be shielding or confronting, could be with or without commitment, etc. Whatever might be the scope and depth, the persons described are involved in a process of *role development*, which comprises role clarification, role rehearsal and role modeling (May, 1982).

In the transient relationship that characterizes nursing education in the clinical setting, the guiding person usually is described as a *preceptor* - from the latin word "precipere" for educate. The relationship is characterized by a commitment for a short period of time during which the preceptor is supervising, training and coaching the student nurse. The staff members on the different wards and in different departments thus have the main responsibility for supervising the students, a preceptor-role for which most of them are not educated, and a duty for which most of them are not paid. The exception in Sweden is in physiotherapy education where some staff members are educationally prepared for their paid preceptorship role. For the other student groups, the clinical teacher, usually employed by the college and not practicing in the clinic, makes visits to the wards and departments where they, in cooperation with the staff, work out a strategy for the learning period. Depending on the staff member's interest and time available for educational matters, the educational plan could be sequenced and well thought-out or fragmentary and fortuitous.

Through their education the students thus alternate between situations which are characterized by different value systems and marked by different conceptions about the aim of clinical practice. The system still appears very much like the old apprenticeship system. It is generally agreed by the nursing profession that nursing education must include practice in patient care settings, and that the practitioner as role-model in the clinical area is important for transferring nursing knowledge (Jones,

1985). There is a question as to whether or not clinical education in general is ruled more by serendipity or by teaching/learning strategies.

2.2 The "status aparte" reflected

In most educational programs where THEORY and PRACTICE are separated from each other in different institutions, the problem of role-delineation is well known. If separate becomes equal to dichonomous, different perceptions regarding policy questions, competence demands, etc. easily could result in a *work-value clash*.

Within nursing education several questions concerning movement from principles to practice still exist, and they are far from new. Kramer stated in an article in 1969 that a duel has been existing in the USA since the 1950's or longer (Kramer, 1969). What she described was the very well-known dilemma in nursing education often referred to as the permanent gulf between real and ideal, between education in school situations and education in real life situations, and between what is *desired* and what is *existing*. The literature, however, offers insight into similar problems in medical, teaching, and business education around the world. Nursing education has no monopoly on theory/practice transition difficulties (Benner & Benner, 1979). In medical education the phenomenon is reported as a "*status aparte*" - phenomenon (Lammers, 1985). The discrepancy in nursing education concerns values more than procedures. It is often described as the value clash between the desired (ideal values) held by the school and the existing (real values) held by the hospital, a clash in which the student becomes the innocent, frustrated victim (Figure 2.2).

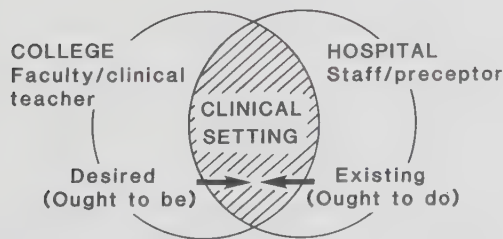


Figure 2.2 The value-clash in the clinical setting.

Werner describes the dissonance nursing students have to suffer as follows:

"In school (the students are prepared) -- to support wellness and to intervene in the case of illness,

independently caring for the patients. But if they meet with a role model whose job appears to be running the commandpost relating to the physicians' written orders regarding the medical management of patients - they are naturally confused." (Werner, 1980, p. 547).

Benner & Benner (1979) document the conflicting expectations educators (ought to be) and employers (ought to do) have about the work role and competency of newly graduated nurses (fig 2.2) due to a basic difference in perception and understanding of skilled performance.

What is real and what is ideal is, however, often more complex and should be related to what is possible. Naturally students are confused, but students are not "puppets on a string". They enter the clinical settings with expectations and values of their own. They also very quickly learn which characteristics are in favor on the actual ward in the clinical setting (Melia, 1981). Sometimes they try, encouraged by the school, to be critical observers and change agents in the clinical setting, guided by a very generally held school philosophy about health care. But sometimes they judge practical performance "in the school way" as unnecessary, impractical, and out-of-date (Gott, 1984). In between, students' expectations are over-ambitious and unrealistic. They are too inexperienced to be given responsibilities, they are uncertain and therefore unwilling to take risks, and they are unskilled in communication (Schein, 1964). These issues are important to realize in discussing value incongruity as a trap for the frustrated student.

A variety of explanations and reasons have been given to throw light upon the phenomenon of discrepancy in order to increase understanding. In the classical work of Kramer (1974), the "reality-shock" of the school-to-work transition has been described. During the last decade several research studies abroad have highlighted the problem of value-clash involved in nursing education. The discrepancy and the difficulty of integrating, combining, or linking theoretical and practical knowledge in health care education has been described from different points of views by Olesen & Whittaker (1968); Bendall (1975); McPhail (1975); Benner & Benner (1979); Melia (1981); Orton (1981); Fretwell (1982); Alexander (1983,1984); Benner (1984); Gott (1984); Jenkins, (1985). Within Swedish health care education some reports and articles regarding "the gulf" indicate that the same problem is found here. Research concerning the phenomenon of troubled role delineation has been carried out by Johansson (1979a, 1979b, 1983a).

While discussing approaches to promote collaboration between education and service, Mc Phail (1975) views the discrepancy in light of the fact that faculty/clinical teachers have no responsibility for ensuring high standards of care in the clinical settings used for students' practice. She also emphasizes that the nursing staff on the wards do not understand the goals and rationale underlying educational changes. One reason, given in the work by Fasano (1981), is that faculty members in schools of nursing seldom have the same relationship to clinical settings as have the teachers in medical education.

It has also been discussed whether or not the dichotomy in the beginning was caused by the division of school and hospital administration. In earlier days the director for the school of nursing and the director for the hospital were the same person. Today some schools/hospitals have re-established this arrangement. Though models of unification of nursing education and nursing practice have been successful, unification is in fact not favored by many nursing groups (Moloney, 1986).

Many attempts have been made to "bridge the gulf", but looking at health care education in general, the reported attempts are like "ripples on the water". Certainly a difference, a discrepancy, or a tension between THEORY and PRACTICE exists. But considering that PRACTICE is context-dependent and that the context is changing continuously, what is the gulf to be bridged?

In their efforts to build bridges, very few studies have focused on the uniqueness of the unpredictable context-dependency that characterizes the clinical settings. Benner (1984) has this point of view in her study of clinical nursing practice using the Dreyfus-model of skill acquisition

"...which distinguishes between the level of skilled performance that can be achieved through principles and theory learned in a classroom and the context dependent judgments and skills that can be acquired only in real situations..." (Benner, 1984, p. 18).

Implicit in Benner's point of view is the perception of the discrepancy not as a gap, but as two different and unique aspects of the same phenomenon. In the study from 1979 she also warns that the perfect congruity of values, knowledge, and skills between THEORY and PRACTICE would block change and renewal (Benner & Benner, 1979).

To perceive the existing discrepancy as a gulf is the result of an inability to perceive THEORY and PRACTICE as two unique aspects of the same phenomenon, and an inability to be aware of the potential for development and growth hidden in the dynamic of that dichotomy - *the hidden potential*.

In an "ideal-real" clash it is also important to recognize to what students are in fact exposed. The explicit curriculum is very easily recognized. Drawing on analysis done by other researchers (Dreeben, 1968; Jackson, 1968; Sarason, 1971), Eisner discussed the way the content in the explicit curriculum is mediated and how social dimensions and psychological aspects in fostering behavior form the implicit curriculum, which has come to be known as "the hidden curriculum" (Eisner, 1979). Last but not least, Eisner highlights the third curriculum - *the null curriculum*, which is

"the options students are not afforded, the perspectives they may never know about, much less be able to use, the concepts and skills that are not a part of their intellectual repertoire." (Eisner, 1979, p. 92).

Eisner emphasizes the need to examine programs to determine that excluded parts are not a result of ignorance, but a product of choice.

Implementing the Swedish educational reform, health care educators of today are confronted with a new dimension of the old problem of "status aparte". As the educational goal is radically changed, the incongruity between what is taught in one institution and what is practiced in the other will be stressed. The new aims for nursing education emphasize new qualities in nursing practice, which are not yet requested or demanded by the employer, and not yet recognized among nurses. The rationale for why a "higher stage" is a "better stage" (Kohlberg, 1981, p. 95) is not yet convincing. The new aim could also be a threat to the acceptance of now established health care personnel in the clinical settings

Therefore, it is important to become aware of the borderline of educational change in the clinical-based portion as well as in the college-based portion of the educational program, and to become aware of the boundary where the tension of incongruity is still a challenge for development and a source for growth. Nature very often has excellent solutions to problems similar to those we are trying to solve. In the cochlea, for example, the helix is formed by the tension of incongruity between shell-surface and volume. The "gulf" is not bridged. It is used to build the helix (Lundgren, 1984).

2.3 Summary

Swedish education for health care professions is divided into a college-based part, often referred to as THEORY, and a clinical-based part, often referred to as PRACTICE. This study will focus on teaching- learning situations in the clinical based part.

Education in the clinical context provides the student with a variety of experiences. Staff members act as preceptors, a role for which most of them are not educated. The staff members are informed by the faculty members about the educational goal, but since teaching is not a main concern for them, they are less familiar with the philosophy and policy mediated in the school situations. Education in the clinical settings, even if of extremely high quality, could be determined more by serendipity than by specific teaching/learning strategies.

The new dimension of professional nursing practice is not yet required for work performance and not yet fully recognized among nurses. However, although learning by confrontation in real life situations is given high priority by the students, very little is known about how students acquire the knowledge, skills, attitudes, and values necessary for professional performance.

The value discrepancy between THEORY and PRACTICE is well-known and has been reported. The conflicting expectations educators (ought to be) and staff members

(ought to do) have are well documented. In implementing the Swedish reform intentions, a risk exists that the changing process will be carried out by teachers and students in the classroom situations but be of little or no relevance for teaching-learning situations in the clinical setting, i.e for nursing practice for which nursing education is supposed to prepare.

Attempts to bridge the gulf between THEORY and PRACTICE often preclude the opportunity to perceive the dichotomy as different aspects of the same phenomenon. The disequilibrium due to context dependence in PRACTICE is seldom perceived to be a potential for development.

3 CONSEQUENCES FOR PEDAGOGICAL PRACTICE

This chapter sets forth, from an educational point of view, that which constitutes the third part of the conceptual framework with regard to *competence development* and *formation* and to *educational processes*. These are fundamental phenomena on which to focus *pedagogical practice*. As concept pedagogical practice is defined as systematic actions carried out in organized ways in order to influence and change individuals toward defined educational goals (Berglund, 1983).

The referential framework presented in Chapters 1 and 2 was given before the empirical study began, whereas the framework presented in this chapter was formed during the research process. The educational reform intentions relative to holistic patient care and professional nursing practice (Chapter 1) were delineated, and role development in clinical settings (Chapter 2) has been discussed for several years. The educational aspects, however, existed in terms of "a forshadowed field" but were not used until the phases of data collection for this study.

3.1 Competence development and formation

The aim to produce analytically and critically thinking change-agents for better patient care (i.e. professional practitioners) obviously will have consequences for the pedagogical practice. In the curriculum, activities are outlined which distinctly reflect a desired change within the students' cognitive and affective domains, bringing about new insights, increased understanding, and a changed way of behaving and acting - a change from "knowing how" to "knowing that". Educational situations should be marked by a scientific awareness which, according to Johansson (1983b), implies that

"...educational and learning procedures are characterized by features denoting scientific work: Curiosity, critical thinking, analytical working up, creativity, knowledge building, problem orientation, intellectual alertness, and independence." (Johansson, 1983b, p. 179) <My translation>

Additional changes in attitudes and values are important to enable students to utilize the scientific dimension of professional nursing practice.

Different ages have produced different models for teaching aimed at stimulating the acquisition of knowledge, training of skills, and changing of attitudes. Pedagogical schools with roots in different philosophies have come and gone. The fluctuations have been wide pendulum swings. Students have been perceived either as passive receivers or as active creators. Environmental preconditions have been perceived

either as predetermined and unchangeable or as possible to influence and change. Concern for either the student's personal development or adaptation to society have dominated. Emphasis on educational content has either been greater or less than emphasis on educational methods. Questions at issue have been: To develop or to be developed, to form or to be formed. The questions have been answered in various ways. Due to different definitions of concepts such as knowledge and human beings, different models for the pedagogical practice have appeared from ancient to modern time.

The importance of perceiving the surrounding environment as interacting with cognitive and affective factors in a process of change has been stressed by such prominent scholars in modern time as Dewey, Piaget, Bruner, Bronfenbrenner, Montessori, to mention a few. Their theories and models have been accepted and criticized alternately.

Borrowing words from Dewey, education aims toward "... development from within and formation from without" (Dewey, 1963), but whether observed changes in behavior are effects of internal development or of external formation - gained or given - is a classical question which can be traced far back in time and is found in Plato's dialogues (Plato, transl. Grube 1981).

Existing interplay between internal and external factors is obvious, but the question regarding causality is answered with hesitation. For example, is learning a consequence of development or is learning a precondition for development? Are learning and development the same thing? The question from the Plato dialogue on HOW it "comes to be present in man" (ibid) is still awaiting an answer. Piaget perceived development and learning as two different processes (Piaget & Inhelder, 1969 - see next section).

Among Swedish researchers, Marton & Säljö (1976) and Qvarsell (1978) have posed the questions. Marton & Säljö define learning as a process through which individuals develop. They perceive of intellectual development as a socio-cultural (as opposed to a biological) process. Their answers to the above questions are: Learning is development and development is learning. Every learning situation is development in miniature. Qvarsell (1978) defines development as a long-term change in which learning processes are important elements.

Education is, however, seldom a question of either/or. Education has to consider both development *and* formation. Internal, external, and environmental factors could be perceived as convergent refraction of parallel light beams through a lens, which come together to produce changes within the cognitive and affective domains.

3.1.1 Development as movement in gradual stages

Piaget's pioneering work which emphasizes, from a meta-theoretical point of view, the *qualitative changes* (kind rather than amount) characterizing different stages in *cognitive development* through childhood has been very influential. Piaget stated that development and learning are two quite different but closely related processes. Thinking and perception are the results of development and not of learning. However, in education the developmental process and the learning process are hard to separate (Piaget & Inhelder, 1969).

According to Piaget the force for intellectual development is the tension arising from discrepancy between received information regarding a phenomenon and the mental or cognitive structure the individual has of the phenomenon. As a consequence of the individual's need for equilibrium, new experiences are actively assimilated and adapted, resulting in a gradual reorganization of the cognitive structure when the individual is ready to assimilate, adapt, and reorganize. New insights give stability and increase the ability to separate, differentiate, and integrate.

Piaget's ideas that changes occur in distinct *stage sequences* and that each stage requires a different way of thinking and a reorganized way of assimilating information became, within developmental psychology, revolutionary and important knowledge (e.g. Furth & Wachs, 1974).

Piaget's theory of cognitive development has been the foundation for many teaching and instructional models. Among others, Bruner and Montessori emphasized the importance of adjusting learning experiences to developmental stages (Bruner, 1977) or sensitive periods (Montessori, 1963). Adjusted to occasions when curiosity and internal motivation are optimum, the activities will challenge the intellectual equilibrium.

In later years, the question regarding the individual's ability to create cognitive structures of increased complexity has generated lively discussion. Piaget's theory was questioned by Chomsky and Foder in a discussion in 1980 which created a stir. The theme was "The learning paradox" and the central question was: How can a structure generate another structure more complex than itself (Bereiter, 1985).

Inspired by Piaget, Bruner described cognitive development as movement through stages (Bruner, 1974). Bruner emphasized the growing ability to free oneself from stimulus-control, to use language for communication, to interact with those around, to internalize phenomena, and to generate several alternatives simultaneously. Bruner determined that cognitive processes such as perception, thinking, conceptualization, and problem-solving are not developed by an increased number of associations or S-R connections, but through context-dependent development. From the developmental psychology point of view, interest has been concentrated on childhood and adolescence. A theory of cognitive development, however, principally explains how

an individual, confronted with something new and unknown, processes given information in a different way.

For education, compiled knowledge regarding stage characteristics facilitates the ability to move through stages within the framework of the individual's developmental potential. That this potential varies is known. Biological factors, lack of stimulation, poor motivation, etc. could limit the individual's ability to use differentiation and integration to develop information of increasing complexity or at a higher level of abstraction.

Stimulation and motivation are often highlighted, whereas attention is seldom paid to biological factors such as transmission of nerve impulses and formation of myelin sheaths around axons (e.g. Bruner, 1976, Dewey, 1963). The relation between physiological and cognitive functions is not completely known.

Changed conditions in adult life may produce a changed perception of the world around, but how thinking processes develop in adult life is scarcely known. In a discussion regarding the concepts of development and learning related to adult education, Marton *et al.* (1977) began with Piaget's definition perceiving

- *Development* as a qualitative change (different) due to an internal change of thinking; a reorganization (cf. development from within).
- *Learning* as a quantitative change (more) due to external input; a stretching (cf. formation from without).

According to Marton *et al.* (1977), the concepts of development and learning, as related to the concept of change in thinking, have been perceived as being mutually independent phenomena for a long time. The concept of development is used mainly to characterize changes during childhood and adolescence, whereas the concept of learning is used mainly to characterize changes in adult life. From the authors' point of view it should, however, not be presumed, that cognitive development is complete at a specific age. Human thinking, even after adolescence, is characterized by qualitative developmental changes.

A stage model, as discussed in the works of Piaget and Bruner describing cognitive development in childhood, could be used to describe changes in thinking during the adult period of life. Marton *et al.* (1977) conclude that, due to the idea that cognitive development is age-related, few investigations have been carried out regarding cognitive development after adolescence. They mention as important the study by Perry (1970). Perry studied knowledge development among adult students and found the handling of knowledge at three different levels:

- (1) The students perceive knowledge as the number of right answers.
- (2) The students acquire knowledge. They understand, interpret, and evaluate.
- (3) The students use the knowledge. They make decisions from an internalized perspective.

Since qualitative differences are found in perception and information processing in adult life, a concise knowledge regarding stages characterizing adult cognitive development would be helpful to use when planning learning opportunities within the changed health care education system where behavioral changes are described in terms of increased complexity.

Benner (1984), in her research within the nursing domain, has described the gradual development from novice to expert in clinical nursing practice. The increasing ability to make value-based judgments and act in complex caring situations is described at different levels or stages. Benner has applied a model developed by Dreyfus & Dreyfus. In their model the developmental stages are characterized by

"... a movement from reliance on abstract principles to the use of past concrete experiences as paradigms." (Benner, 1984, p. 13)

Within the *affective* domain, the concepts of development and learning were never subject to the same distinction as in the cognitive domain. Behavioral changes in the affective domain, if independently described, more often have been perceived as being haphazard. As Reilly (1978) suggests, they "just happen to good people." Reilly continues:

"I do not have to go very far into the past to see that affective learning was perceived to be "caught" by the students with no suggestion of its being developmental, a quality ascribed to the other domains. The students were expected to evidence all these fine qualities of the good nurse, but where they came from was not of primary concern to faculty. I wonder if too many instances affective learning is still perceived as "just happening. (Reilly, 1978, p. 33)

Krathwohl *et al.* (1971), who studied the affective domain and elaborated a model for stage movements, are of the same opinion. It is hard to dispel the notion that development within the cognitive area is automatically followed by development in the affective area. On the contrary, according to Krathwohl, cognitive development under some circumstances could have a negative impact on affective development. The interplay of cognitive and affective development has been and still is an important area for research (*ibid.*).

Development within the cognitive area could be utilized as a means for development within the affective area. Affective development could also facilitate cognitive development, since a changed attitude could increase curiosity and ability for reflective observations. Krathwohl describes the integrated phases of development as follows:

"Perhaps it is analogous to a man scaling a wall using two step ladders side by side, each with rungs too wide apart to be conveniently reached in a single step. --- The ladders are so constructed that the rungs of one ladder fall between the rungs of the other. The attainment of some complex goal is

made possible by alternately climbing a rung on one ladder, which brings the next rung of the other ladder within reach. (Kratwohl *et al.*, 1971, p. 60).

Piaget perceived cognitive, affective, moral, and social development as each being a condition for the other. He thus never directly dealt with how they were related. Cognitive and affective aspects of behavior certainly could not be reduced to one aspect. They are, according to Piaget, complementary but inseparable (Piaget & Inhelder, 1969).

The examples above show how the concept of *movement in gradual stages* contributes to elucidate the concept of *development*. In Piaget's writings each stage must satisfy a set of criteria. The most important of these are summarized by Brainerd (1978):

- Qualitative change in cognitive contents.
- Culturally universal and invariant sequence of stage progression.
- Inclusion of the cognitive structures of each preceding stage in each subsequent stage.
- Overall integration of the structures of each stage.

To understand the consequences for education of implementing reform intentions, knowledge regarding the student's cognitive and affective or intellectual and emotional development is of importance.

The concept of change perceived as process, as growth, and as movement in gradual stages implies that process, growth, and movement are central concepts for educational planning, accomplishment, and evaluation related to a judgment of the student's educational needs and existing preconditions. Stimulating intellectual confrontation and experiences influence cognitive and affective developmental processes. To stimulate different areas within the left as well as the right hemisphere of the brain could be another way to express it.

Taking into account the contextual influence means that the process of change is directional. This makes expressions as "behavior" and "experiences" within the cognitive and affective domains insufficient. As goal-oriented behavior and experiences are processed, change could be better described in terms of *actions and judgments* (Björkman, 1978).

Using Piaget's and Bruner's perspective, development could be perceived as movement along a line drawn from simple to complex abilities. Movement toward complex describes an increased (different, reorganized) ability to understand, to process information, and to handle phenomena and situations of increased complexity.

If the movements from simple to complex are described, judged, and categorized as stages in a developmental process, and if cognitive and affective development are

separate but related - complementary but inseparable (Piaget) - a simple model could be structured (Figure 3.1). However, development could never be described algebraically. The model is only used to illustrate two dimensions of development and to demonstrate, by the direction and strength of the vector, how the individual's total ability for action and judgment is changed.

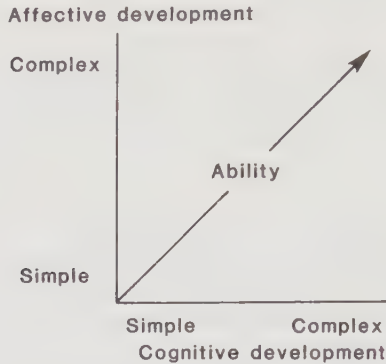


Figure 3.1 Ability for action and judgment as a function of cognitive and affective development.

Is it then possible: a) To judge and categorize stage characteristics; b) to observe and identify behavior/activities and experiences/judgments of increased complexity; and finally, c) to relate some of the observed changes to the impact of development and formation?

3.1.2 Stages in cognitive and affective development

Piaget and Bruner discussed the qualitative changes from simple to complex in terms of *development*, but the changes from simple to complex have also been discussed in terms of different levels of educational objectives and *learning* and are thus a matter of concern for the *pedagogical practice*.

From the educational point of view, stage movements have been described with different kinds of models. Bloom (1979) and Krathwohl *et al.* (1971) have presented two of them. For the purpose of "...ordering the things, with which we deal" (Bloom, 1979, p. 24), they have compiled patterns of student behaviors that characterize stages in the cognitive (knowledge) and the affective (feelings and attitudes) areas representing stated objectives at different levels. Since the classifications of abilities are based on increased complexity, their systems are designated taxonomies.

The increased complexity is described in terms of behaviors that change from being situation-specific for a predictable course of events to complex patterns of activities for an unpredictable course of events. Bloom's taxonomy (1979) for the *cognitive domain* has six major classes: (1) Knowledge, (2) Comprehension, (3) Application, (4) Analysis, (5) Synthesis, and (6) Evaluation. Each major class has several subclasses with detailed descriptions. The taxonomy of Krathwohl *et al.* (1971) describing changes in the *affective domain* is organized in the same way and has five major classes: (1) Receiving (attending), (2) Responding, (3) Valuing, (4) Organizing, (5) Characterizing by value.

During the 1960's, the two taxonomies (developed in 1956 and 1964) were very popular tools for educational planning and evaluation. They are presumed to be well known, as they seem to be experiencing a renaissance in this decade. For example, in a 1984 WHO report (WHO: Educ. 84:183) entitled "Nurses and physicians of tomorrow", in which a world-wide survey of professional roles and educational programs is presented, the following sentence appears in the section where educational planning at Ben Gurion Health University in Beersheva is evaluated:

"It is also interesting to note that these educators have devised a way to provide badly needed specificity in learning objectives in the intellectual domain - Bloom's cognitive domain." (Abrahamson, 1984, p. 168)

The two taxonomies mentioned are merely reflecting an increased complexity. They are not evaluating what is good or bad at different levels, and the borderlines between levels are not sharp.

According to Krathwohl *et al.* (1971), it has been much harder to identify student behavior and learning objectives in the affective domain than in the cognitive domain. This brings to mind the classical question in Plato's Meno-dialogue: "Can you tell me, Socrates, can virtue be taught?" (Plato, transl. Grube 1981, p. 59). The difficulties in categorizing courses of events and changes in the affective area have contributed to the perception that affective behaviors are unchangeable as to stage movement and thus not open to systematic influence.

"Competency in cognitive and psychomotor skills is generally identified as goals of most educational programs in health care agencies. They are taught within these programs subject to disciplined pedagogy. What about skills in the affective domain? These skills are acknowledged as essential to nursing ministrations, but unfortunately they are not subjected to the same rigorous pedagogy as are the other domains." (Reilly, 1978, p. vi)

Using the taxonomies of Bloom and Krathwohl *et al.*, Erikson (1979, 1985) has described changes from causal behavior to deliberate activity. She has defined the concept of "readiness for action" as a function of cognitive and affective processes. Erikson states that developing a readiness for action is the goal of the didactic process in nursing education. To reach the goal requires, according to Erikson, leaving the

stages of rote-learning or rule-memorizing. Bloom and Krathwohl perceive cognitive and affective changes along parallel lines, whereas Erikson uses the lines as axes in a system of co-ordinates (figure 3.2).

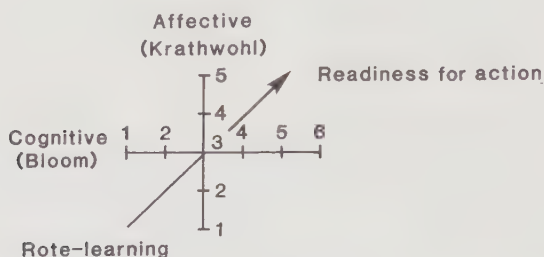


Figure 3.2 Readiness for action as a function of changes in cognitive and affective domains (Erikson, 1979).

Different taxonomies use different qualitative concepts to describe the structure of increased complexity in hierarchically ordered stages. The concepts refer to used theoretical perspective such as information processing, concept analysis, developmental, and instructional theories. Different methodological approaches have been used to construct taxonomies; so is e.g. the taxonomy of Bloom based on scaled survey results where judgments about educational qualities have been compiled.

A more recent model for qualitative assessment in the cognitive domain has been presented by Biggs & Collis (1982) who, however, argue against the different perspectives and approaches. From their point of view, the link between development and learning has not been sufficiently considered in the models. They doubt that stage characteristics can be arrived at by surveyed opinions and thus question Bloom's approach.

Biggs & Collis believe in natural stages of thinking and growth of learning similar, but not identical, to Piaget's stages. To elaborate their taxonomy they turned to Piaget, but did not find the stage theory applicable for assessing learning qualities. The diagnosed cognitive structures of the individual at different levels were, in their opinion, too hypothetical, not measurable, and inconsistent, since individuals do not always function at top level. They thus extended the theory of Piaget to have bearing in the educational field. By changing the concept of "developmental stages" to "levels of learning qualities", they shifted the scene from the student to the student's response, from the individual to the skill, describing a particular performance at a particular time. In fact this change was accomplished in the Bloom taxonomy.

The taxonomy of Biggs & Collis describes the levels of increased complexity in terms of Structure of Observed Learning Outcome (SOLO). The response levels are isomorphic but not identical with the corresponding developmental stages. The increased complexity, however, is not covered by response levels. To emphasize the cyclical nature of learning, Biggs & Collis propose a "learning cycle" at each level. Every cycle includes the same steps as those labeled as taxonomy levels. The SOLO-taxonomy is, according to Biggs & Collis, the happy "marriage" between *cognitive development* and *learning* and closes the search for increased flexibility.

Their "miniature learning levels" at each response level as well as the earlier mentioned "miniature developmental stages" (Marton & Säljö, 1976, in section 3.1) emphasize the complexity of structuring the concepts of development and learning for educational planning and evaluation, and to individual attainment and ability. However, the "miniatures" hardly contribute to clarification of the complexity.

The examples mentioned up to now are all attempts to capture and label behavioral changes, defined as development and learning, from different perspectives. Static stage features are easier to enumerate than are the dynamic dimensions such as variation, cycles, phases, etc. Static and dynamic features were, in terms of fixed characteristics and variations, discussed by Montessori early in this century. The diagnosis of the individual is essential, but has to be regarded as constituting a means and not merely indicating an end (Montessori, 1913).

Static and dynamic features of nursing education are combined and illustrated in Figure 3.3. Ability as a function of cognitive and affective development was depicted earlier in Figure 3.1. That figure is further combined with taxonomies (e.g. Bloom and Krathwohl). Achieved level of *ability*, i.e. demonstrated knowledge, proficiency, insight, understanding, judgment, action and similar components of capacity, define *competence* (cf. Qvarsell, 1978). *Attaining competence* is the sequentially-ordered process through which the individual reach the level of ability.

The static component and the dynamic component thus are joined in a simple model in Figure 3.3 illustrating

static phenomena or products plotted at different occasions as stage of human development, demonstrated competence level, and level of objectives for educational efforts.

dynamic phenomena or processes as developmental movements, changes in competence where direction is indicated by the shape of the vector.

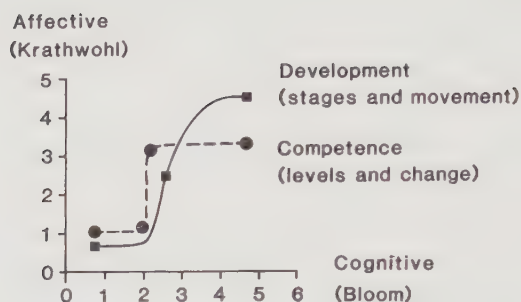


Figure 3.3 Static (stages/levels) and dynamic (movements/changes) phenomena .

To describe competence in hard-to-measure terms could be hazardous. According to Bloom, thoughts and ideas regarding education could become static if taxonomies are used too rigidly. Taxonomies should be used to increase understanding of a dynamic, changing process (Bloom, <1956> 1979). Thus, Figure 3.3 could be used as a tool to increase understanding of how cognitive and affective abilities such as logical thinking and value-based judgments, i.e. *competence*, are *formed* and *develop* in movements from one stage to another. At the same time, the figure could tell us something about the boundaries where change can or cannot occur.

In attempts to capture the process of directed change, it is beneficial to consider the concept of *looping* and the distinction made by Ashby in 1952 regarding single-loop learning and double-loop learning. This distinction is further elaborated by Argyris & Schön (1982). All activities and judgments do not demand the utilization of a high competence level. For educational endeavors, single-loop learning utilizes known and familiar strategies for highly predictable activities. Double-loop learning requires "reorganization and/or stretching" and changes in the individual's action strategies, governing variables, and field of consistency.

3.1.3 Stages in moral development

Bloom's and Krathwohl's developmental stages in the cognitive and affective domains express behaviors in a neutral way. If, however, educational aims are formulated in terms of attitudes and values ("ought to be") implying human compassion and ethical considerations as they are in the curriculum for Swedish health care education, another concern will be the student's moral development as to action and judgment.

Basically, growth in moral judgment was investigated by Piaget as an element of cognitive, conceptual development, but research had its break-through when

Kohlberg (1958), expanding Piaget's schema, proposed the cognitive-developmental theory of moral reasoning. Kohlberg's point of view has dominated research on moral development since the 1960's (Bergling, 1981, 1982).

According to Kohlberg (1981), ethical-moral values can not be considered as situation-specific, but can be traced *developmentally* as an invariant sequence of stages and levels achieved by striving for equilibrium. Drawing on the work by Piaget and Dewey on "moral thinking and choice", Kohlberg has, by exposing children to stories containing moral dilemmas, found a developmental pattern of qualitatively different stages of moral reasoning and moral judgment. Kohlberg distinguished between three levels and six (seven) stages of moral reasoning and created a theoretical framework for moral development in which "stage" is defined as structure of value, not as content of value.

Level 1, the level of preconventional morality, is characterized by a punishment/obedience orientation followed by an egocentric orientation, where rules are followed if they serve an immediate interest. At level 2, the conventional level, the stereotype of various rules and demands of laws are met - a conventional role of conformity, where duties are fulfilled. The next level, the level of postconventional morality, is characterized by a recognition of diverse values and by an orientation toward autonomous ethical principles.

Kohlberg is focusing on development in the child, but in accordance with the earlier description (Section 3.1.1) of development as reorganized thinking, stage movement could be applicable to the adult individual as well.

Moral behavior is, according to Kohlberg, influenced by many factors which make the behavior reversible and situational. Moral behavior consists of two main factors:

- *Moral reasoning*: which appears in invariant stages and is dependent on ability for logical reasoning.
- *Moral judgment*: which is distinctive and irreversible. The quality of judgment is indicated by how the conflict situation is defined and what reason is given for choice. The ability to make moral judgments is a necessary if not sufficient condition for moral action.

The similarity between the higher stages in Kohlberg's and Krathwohl's models are obvious. The postconventional morality level is very close to the highest level in the process of internalization as described by Krathwohl for development within the affective domain. A high stage of consciousness and socialization will enhance the ability for moral judgment and decision-making on ethical issues. According to Kohlberg, higher stages can be reached developmentally, but that does not imply that everyone will reach them.

Kohlberg's stage model for moral development has been criticized for lack of empirical relevance and is still in the process of being tested (Brody, 1978; Peters,

1978; Isakson, 1979; Bergling, 1981; Callahan & Callahan, 1981; Gilligan, 1982; Omery, 1983). The invariant stage progression has been questioned in some studies where the subjects were found to be capable of moral judgments at a higher level, but utilized a lower level. It was suggested that the question of selection depended on the demands of the situation in which the judgment was required. However, to base developmental stages on capability is one thing, and on utilization is another (cf. loop-learning in Section 3.1.2).

Doubt about the need for research concerning the order of stages in general is also expressed by Peters (1978). An order could be arrived at by reflection as progressive stages already have been demonstrated by Plato. Peters gives the example of the allegory of the ascent from the cave. That the motivational side of moral development is reduced to the necessity for equilibrium is also questioned by Peters (*ibid.*), who argues that the affective aspect of development is excluded in Kohlberg's model. This alternative view is also touched on by Rörvik (1980) who interprets Kohlberg's findings as a result of learning norms rather than originating in cognitive development (Bergling, 1981).

Since curricula for health care education are normative and since health care professionals frequently encounter situations where ethically-based judgments are required, some research has been carried out within nursing education using Kohlberg's model and/or stressing the importance of using it (Mahon & Fowler, 1979; Chrisam, 1980; Johnston, 1980; Ketefian, 1981a, 1981b; Clay *et al.*, 1983; Omery, 1983). The research reported has investigated:

- * Critical thinking vs. moral judgment.
- * Moral reasoning vs. knowledge and valuation of ideal moral behavior.
- * Student nurses' response to hypothetical moral dilemmas.

The process of internalization within the affective domain, as described by Krathwohl, is not only close to moral development but also close to the process of socialization. In many cases the processes are perceived to be equal and mingled. Moral development is described as part of social learning. The concept of internalization includes moral values. The ability for *moral reasoning* could, however, be crystallized as a main factor characterizing the highest levels of development within the affective, social, and moral domains described here, although Kohlberg argues that the moral force is cognitive.

3.1.4 The question of educational method

Given that the goal for education is to form and facilitate development perceived as movement through stages, and given that development within nursing education is perceived as movement toward abilities characterizing professional practice, for example, diagnostic reasoning and value-based clinical judgment, what is then

needed to promote educational success? What is needed to form and facilitate movement through stages? How can objectives that differentiate and integrate intellectual, emotional, and practical skills of increasing structural complexity be operationalized in the curriculum?

To know what kind of experience to provide at what time and at what place for the individual student is the *cornerstone* of ideal education. It is necessary to be aware of environmental factors as well as of the student's developmental stage and his/her learning style and learning needs, to maintain interest by providing expected experiences linked to prior knowledge, and to arouse expectations. That is, to provide experiences that are intellectually stimulating, motivating, and maturing and that are in accordance with the student's developmental stage, learning style, interest, and readiness. Or, expressed in another way,

"Creative teaching is the facilitating or arranging of experiences within the learner's world. Teaching is the act of communicating in a variety of ways with the individual and/or in group at the actual point of the learner's experiences. Teaching is the art of setting the stage and shifting the scenery so that the learner makes differentiations and organizes parts and wholes into new and meaningful patterns." (Schweer, 1968)

Some people involved in teaching have that kind of perceptual grasp of what the situation offers for experiential learning. They are also very close to what has been described as characterizing "connoisseurship" (Eisner, 1979). For them education is

"...an amalgam of the behavioural sciences and the art of teaching --- less like inducing a chemical reaction and more like composing a symphony." (Allen, 1981, p. 203).

But for others, the search for a method which is conducive to learning and which will bring about change and development is central. Not only for teachers who act as if learning was the outcome of teaching and as if knowledge was a product rather than a process, methods are important tools for goal achievement. But the search for THE method is like the search for the Holy Grail.

Methods are, however, often, in a peculiar way, detached from their origin in a theoretical base. They are supposed to be an application of a theory, but they are drifting away nurtured by values and beliefs, and legislated as a philosophy which may or may not be shared among faculty members. Cutting off their roots in theory can hardly be useful.

Since the 1960's, the philosophers Dickoff & James have discussed theory in a practice discipline like nursing, but their statements have validity for education, too. According to them, a theory guiding practice toward goal achievement must be prescribing and normative (Dickoff & James, e.g. 1968). A theory of instructing or teaching (as well as a theory of nursing) must have its starting point in a systematically ordered description of occurrences in teaching/learning situations. The

source is the activity performed, including values and beliefs. Brought to awareness, articulated, tested, revised, and communicated, educational methods would be rooted in a sound theoretical foundation and methods in pluralistic fashion be recognized.

If, however, no pedagogical/instructional theory is utilized which prescriptively and normatively facilitates individual development, the guiding principles will remain as many as the people concerned about finding them. In discussing theories of instruction that facilitate development, Bruner (1976) states:

"For one thing, the rate of change in the surface properties of knowledge will likely increase. That is, the theory of circuits will blossom, although likely as not it will do so on the basis of understanding more deeply some principles that are now known but not fully understood."

(Bruner, 1976, p. 118)

Thus, learning becomes a way to use what has been learned to approach the variety of other learning situations. As a suggestion, Bruner gives general devices which penetrate every kind of method. He stresses the importance that students:

- Discover what is in their own heads and recognize that they can move further.
- Find the connections between old and new knowledge and have the ability to conceptualize these connections.
- Learn to draw conclusions in spite of insufficient data (make them go "beyond" and use intuition).
- Successfully experience their own capacity to handle information flow to solve problems.

- Discover that attained skills can be used and are needed.

(Bruner, 1976, pp. 86-97).

It is a question of encouraging students to view education as a laboratory, rather than a target to be hit or missed (Styles, 1975).

Dewey pointed out that providing growth-facilitating experiences at different stages of development is of utmost importance. Every teacher will agree to that. The same idea inspired Montessori in the 1930's not only to agree but also to provide pre-school children with learning opportunities for different developmental stages in an environment conducive to change and development. When the child is ready to move, he/she moves (Montessori, 1976). Methods must be directed toward unveiling and developing (Montessori, 1936). What Montessori created is most interesting. She developed her method at the beginning of this century, and the method remains successful though unchanged. The name Montessori is entirely connected with the pre-school system, but she has also, in one of her books, discussed education at the university level (Montessori, 1973). Discussing strategies for development after adolescence, she makes the statement that

"...education should not limit itself to seeking new methods for a mostly arid transmission of

knowledge; its aim must be to give necessary aid to human development." (Montessori, 1973 p. 125)

Providing growth-facilitating experiences within nursing education has been discussed by Benoliel (1983). She says that it seldom is a question of adding new content to an already crowded curriculum, but a question of introducing a range of content bearing on concepts such as holistic care, research-mindedness, health promotion, etc., and giving students the opportunity to develop the art of reasoning and arguing in discussions. Analytical skills are, however, slowly developed and hard won (Strauss, forthcoming).

Learning experiences which facilitate the development of abilities for diagnostic reasoning, problem-solving, judgment, etc., within medical education have been the focus for research during the last 15 years at McMaster's University in Canada. In attempts to make explicit the differences in learning modes between the performing expert and the performing novice, between learning when a discipline-based curriculum or an integrated curriculum is used, most research results end up with *one* differentiating factor - the amount of knowledge. According to the findings at McMaster and drawing on psychological cognitive theories, the transfer of knowledge and the acquisition of knowledge is successful when the content is meaningful and linked to prior knowledge, is organized and provides opportunities for elaboration, encodes specificity and similarity of new problems or challenges, and, finally, when it is considered that the rate of teaching is not equal to the rate of learning (Norman, 1985).

Research findings such as those above, if not ignored, could contribute to the development of and movement toward *a theory of instruction*.

3.1.5 The question of learning style

A theory of instruction to facilitate the learner's development, but who is the learner? What is his/her learning capability and *learning style*? The "learner" is usually perceived as an average person, although the "average person" is nonexistent. Most things are measured against what this average learner would do, need, or be able to accomplish (Allen, 1981). Thus, if the "right" learning experiences are provided, will that guarantee the movement of students toward abilities for managing increased complexity? It is beyond the aim of this study to highlight individual preconditions, learning styles, etc., but one investigation carried out in Canada will be mentioned since it pinpoints one interesting issue for nursing education.

In an attempt to assess the learning styles of nurse students, Laschinger & Boss (1984) used the self-scoring Learning Style Inventory designed by Kolb and grounded in his theory of experiential learning (Kolb, 1976; Kolb & Wolfe, 1981). Learning style is defined as the way individuals organize information and

experiences. Experiential learning is conceived as a four-stage cycle based on two independent dimensions of learning:

- (a) Concrete experiences vs. abstract conceptualization, and
- (b) Active experimentation vs. reflective observation.

The learning cycle (Figure 3.4) starts with (1) a concrete experience which serves as (2) the basis for observation and reflection which is then (3) assimilated into abstract conceptualization to serve as (4) a guide to active experimentation and thus create new experiences. An effective learner relies on all four learning modes. According to Kolb, however, individuals tend to emphasize one aspect of each dimension over the other which results in four learning types: The diverger, the assimilator, the converger and the accommodator.

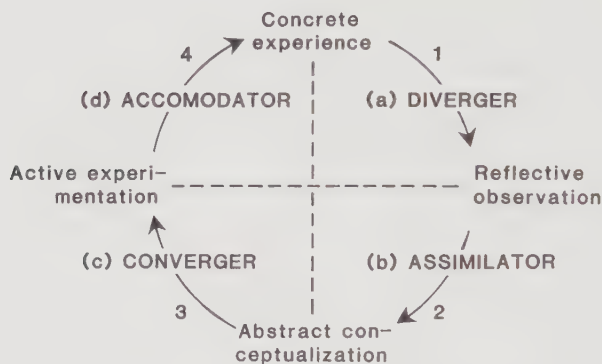


Figure 3.4 The learning cycle (Source: Kolb, 1976).

Kolb (1976) describes the learning style types as summarized below:

(a) *Divergers*: Best at concrete experience/reflective observation. Imaginative and able to view situations from many perspectives. People oriented. Often enter human services professions.

(b) *Assimilators*: Dominant learning abilities are abstract conceptualization/reflective observation. Good at creating theoretical models. Excel in inductive reasoning and in assimilating and integrating disparate observations. Less people oriented.

(c) *Convergers*: Excel in abstract conceptualization/active experimentation skills. Focus on specific problems through hypothetico-deductive reasoning. Good at applying theory to practical situations. Less people-oriented.

(d) *Accommodators*: Best at concrete experience/active experimentation. Adapt easily to immediate circumstances. Solve problems on an intuitive trial-and-error basis. Good at carrying out plans and getting things done. People-oriented.

The aim of the study carried out by Laschinger & Boss (1984) was to discover the learning styles of nursing students (n=268). The results showed that 65% of the participants could be classified as divergers or accommodators, that is, they had a concrete learning style.

Since it is beyond the aim of this study, learning style will not be discussed further. However, the reported research findings should be kept in mind when experiences are planned in nursing education, and when goals which emphasize the holistic approach in patient care, the scientific or research-based approach in nursing practice, and the application of nursing theories to practical situations are operationalized.

According to the reported study, there seems to be a discrepancy between the stated goals and for whom they are stated. The goals appear to be stated for assimilators and convergers (i.e. inductive reasoning, deductive reasoning, applying theory to practical situations), but the majority of students in the reported study were found to be divergers and accommodators (i.e. people-oriented, intuitive problem-solving on trial-and-error basis, getting things done, imaginative, view situations from many perspectives).

3.2 Educational processes

An educational situation is, from a socio-psychological point of view, interactional. The interactions are composed of sequential units which occur over time, and which change over time and could thus be perceived as *educational processes*.

Although it is frequently used, the concept of process combined with the concept of education is not univocal. Educational process could either be used to define the steps taken for achieving an educational goal, or could be used to define what occurs in single teaching-learning situations. The process thus could be studied either at the macro or micro level with a long term perspective or as a situational short event.

How the concept of educational process is used at the micro level is closely linked to how the relation of *process and structure* is perceived. On one hand, a process could be studied mainly as forming the structure of an observed situation. On the other hand, a process could be studied mainly as formed by the structure of an observed situation. In the first case, the process is analyzed in terms of conditions. In the second case, the process is analyzed in terms of consequences. Since processes are sequential and change over time, they are hard to capture. A sequence perceived as a consequence simultaneously sets conditions for the next sequence.

Within pedagogical research interest in analyzing processes and measuring classroom behavior by systematic observations has a longer tradition in the USA than in the Nordic countries, where the first projects regarding educational classroom situations were launched in the 1960's (Gustafsson, 1984). While evaluating secondary school programs, it became evident by that time that achievement tests were insufficient for measuring educational outcomes. Additional relevant information was searched for as a means to increase the effectiveness of instruction. It was stressed as important to investigate teaching and learning as two mutually dependent processes and to increase the awareness of how these two processes were influenced by environmental factors.

Several methods for observing educational processes have been developed over the years. Some of them are summarized by Kallos (1976) as approaching the process (a) by analyzing what teaching is, (b) as a socio-psychological encounter, (c) to understand core features anthropologically, (d) to analyze discourses sociolinguistically, and (e) to manipulate variables experimentally.

A model for analyzing the function of education and the educational process was developed in Sweden by Dahllöf utilizing process data related to curriculum objectives, results, environmental conditions, and frame factors (Dahllöf, 1967, 1970/71, 1978). The model was further elaborated by Lundgren (1972, 1977).

During the last decade extensive research from different theoretical viewpoints has been accomplished in the area. Gustafsson (1984), reviewing the development, reports that research carried out on activities in classroom settings has more often focused on the teachers' behavior (i.e. teaching methods) than on the student's behavior. Observations regarding how teachers act, how they think, how they interact, the role they play, etc., have been classified and categorized in psychological terms. Several systems or schemes for analyzing cognitive and affective components displayed in teaching-learning situations have been constructed. The structured observations have been carried out aided by technical equipment such as audio- and video-tapes. Behavior has been recorded using predetermined categories and the result has usually been presented quantitatively in the chain of cause-effect. Gustafsson concludes that most studies accentuate how little is known and understood of ongoing occurrences in the classroom and stress the lack of methods to get and to analyze qualitative data. According to Lundgren (1977, p.33)

"Educational phenomena cannot be expressed quantitatively and empirical educational theory must be based on data concerning the educational process as it exists in reality and not on analysis of what researchers think these processes ought to be."

Kallos (1976), reviewing research on pedagogical processes, argues that further development within the area is dependent on a broader conceptualization of the nature of pedagogical processes. It is necessary to break with the traditional questions asked by classroom process researchers and to stop putting process data into the

traditional framework of research. A basic aim for studying educational processes should be to describe existing practice and to work out theories explaining what gave birth to these practices.

Research findings regarding teaching-learning situations in classroom settings are, however, hardly applicable to what student nurses encounter in teaching-learning situations in clinical settings (cf. Chapter 2). In the clinical setting the pattern is more complex since the dyadic relation between teacher and student is replaced by the triad of staff member (in a preceptor role), student, and patient. Direct instructional sessions as in classroom settings are infrequent, and several interactional processes are intertwined. In this study the patterns of interaction have been perceived as, on one hand, a way of doing (*intervening*), and, on another hand, a way of being (*interplaying*).

Educational situations in an apprentice system assume that students learn from what the situation exposes them to and what they experience in work situations, in which teaching-learning not is the main feature. Staff members act in the role of a preceptor, but they are not appointed as teachers. Their main duty is to give good patient care, not to educate students. The complexity of *educational processes in clinical settings* thus could be summarized as below and illustrated as in Figure 3.5:

- (a) Students observing staff members (in the working role) interacting with patients, observing what is being done and how it is done, observing the patients' reactions to interventions and interplay.
- (b) Students involved in different situations where staff members (in the preceptor role) are giving them instructions for work performance.
- (c) Students involved in different situations interacting with the patients.

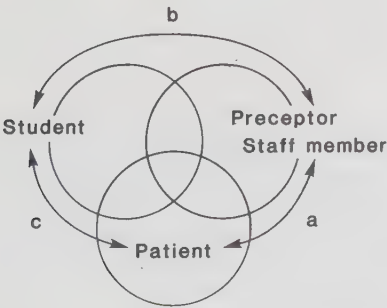


Figure 3.5 Scheme of interactions in clinical settings.

Every single short encounter of staff member and patient in which a student nurse is involved will contribute to develop or shape the student in one or another direction.

To capture what happens in these processes and what the role of *meaning* is in the formation of activities thus would enhance the understanding of why educational situations have the structure they have. It demands a research strategy which allows the researcher to *analyze processes* in terms of a judgment of the *nature* of the activities and in terms of an *interpretation* of what the activities represent and express. This approach denotes the perception of a process as forming the observed structure.

Human interactions are not simple static relationships but rather complex and dynamic, a fact that has raised questions about their accessibility for interpretation of meaning. A concatenation of conditions are embedded in the situations, procedures, and sequences. Is it then possible to make statements, to make inferences, or to theorize about the meaning of an action when the process is occurring and changing over time and human actions are subject to deliberations?

The fact that an act means something is different from the fact that the actor means something with it. Thus "meaning" could be discussed in terms of representation and in terms of intentionality. In a similar way Husserl (in Wetterström, 1977) has distinguished between matter (*Urteilmaterie*) and quality (*Urteilsqualität*) of an act. The first is the general kind of an act such as making a judgment. The second is a specific quality of the act such as making a judgment *of* something. Kaplan, cited in Bellack (1978), has used "act meaning" for what the behavior represents and "action meaning" for the interpretation of intention.

Interpretive research stresses that the meaning of an activity is developed through the activities of people as they interact (Blumer, 1969). A scientific interpretation of human actions in the common-sense reality is thoroughly discussed by Schutz (1971). He emphasizes that the analysis of environmentally-stimulated situations and the analysis of the actor's biographical situation is epistemologically important for understanding human interaction. From his point of view the process is accessible if "action" methodologically is taken as the starting point for investigation.

Meaning, denoting intent or quality, is a complex property of an act and since Plato's days has been perceived as basically unanalyzable. Originating from philosophy, the question has nurtured scientific curiosity and challenged researchers in different disciplines of human sciences through the centuries. Some researchers of today state that intentions can be determined because an intended meaning is indicated by the way it is expressed in behaviors. Expressions could be understood because they are congruent with how a situation is perceived.

von Wright (1972) has formulated a scheme of practical inference which explains how intentions are expressed in behaviors. He contends that the pattern of practical inference holds a similar position as does the deductive-nomological pattern in natural sciences. But since the patterns are of different logical types, a difference also

exists between explanation in the natural sciences and explanation in the human sciences.

Intention is not merely a prerequisite, condition, or cause for action, but also a consequence born in the progress of an activity. This has implications for interactions. A conventional meaning becomes a current meaning when assumptions concerning the environment, i.e. the context and the situation, are taken into account (Wetterström, 1977).

Approaching and grasping the process of human activities demands that the research instrument sensitively registers the complexity of occurrences in an immediate and multidimensional perspective. It follows that only the researchers themselves could function as instruments.

Within pedagogy the educational process has been discussed as "the black box". The expression is borrowed from physics, where it has been used to describe internal processes that are inaccessible to direct observations. Knobs, wheels, and dials on the outside of the box are manipulated, and the effect is registered as external evidence of what is guessed to have happened inside the box (Guba, 1978). To grasp a process is to open the black box, to register what is there, and to identify the forces acting to generate and shape the course of the process.

Borrowing some other examples from the natural sciences, the box must be (a) perceived in a multidimensional perspective, (b) the different dimensions be merged to one. That will enable the researcher to experience and get a mental image of the constantly changing vector (Figure 3.6).

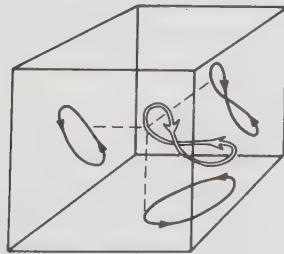


Figure 3.6 The multi-dimensional perspective.
(Source: H. Mark)

3.3 Summary

It is not unusual to find the constellations Dewey-Piaget-Montessori-Bruner and Piaget-Kohlberg in the literature. With roots in cognitive developmental psychology or similar fields, they all embrace one of the central pedagogical questions: How are knowledge and skills attained, and how are abilities changed by development, formation, and contextual influence? In shaking the kaleidoscope to re-arrange the same pieces, they have produced different images to be considered, and have delineated one core assumption. That assumption is that behavioral change is not a simple question of EITHER-OR. Basically their thoughts, models, and theories have provided a solid foundation on which different models for stage movements have been built that emphasize development as a qualitative change in thinking, or emphasize changes in taxonomic order due to teaching-learning endeavors.

For educational purposes, taxonomic models such as Bloom-Krathwohl's and Biggs-Collis' illustrate attempts to use structure and order to facilitate communication. Different researchers' statements show that although questions regarding development and learning have been of interest since the days of Plato, many of them remain unsolved.

Changes in the cognitive, affective, and moral domains due to "development from within" and "formation from without" are core features of stage movements and loop-learning. Utilized in an attempt to form a model applicable to development and learning within nursing education, the static and dynamic features of stage movements and loop-learning were illustrated in terms of outcome of change and direction of change.

Learning methods and learning styles were very generally and briefly touched on. It was questioned why methods often are detached from their origin in the theoretical base in a peculiar way and why methods so often are connected to teaching in terms of "knowledge transmission" and not in terms of "setting the stage and shifting the scenery" to aid human development.

Questions regarding the educational process emerged in the 1960's and research on the educational process in classroom settings has increased rapidly during the last decades. Very little research has been carried out regarding educational processes in clinical settings. These would show different patterns of interaction because staff members are acting in a preceptor role and patients are also involved in the educational endeavor. To understand the meaning of activities, these processes could be analyzed by capturing and interpreting core features.

Facilitating learning experiences has been the focus for research within medical education during the last 15 years at McMaster University in Canada. Results of that research pinpoint the common-sense notion that there are no short cuts to competence development. The differentiating factor always appeared to be the student's amount of

knowledge. This brings back the unsolved metatheoretical question concerning the development/learning paradox how a structure can generate another structure more complex than itself.

To shake the kaleidoscope and observe the variables in different patterns provides the only way to come closer to the answer.

4 PROBLEM AREA AND AIM OF THE STUDY

The aim of this empirical study is to explore and analyze *educational processes* in clinical settings, to generate working hypotheses regarding the educational situations, and to assess and discuss the utility of a *methodological approach* for *process analysis* of educational situations in clinical settings.

4.1 Educational processes in clinical settings

4.1.1 Problem area and questions at issue

Nursing education in Sweden is in a changing phase. The new aim emphasizes a professional approach to holistic patient care and research-based nursing practice. In this study that aim has been expressed in terms of strengthening the ability for a skillful use of the diagnostic reasoning process in identifying health-related problems and in making clinical judgments and decisions (cf. Section 1.2.2).

Changing the educational aim highlights the well-known discrepancy between what is taught in one institution and what is practiced in another institution as student nurses move from principle to practice (cf. Chapter 2). Aims are supposed to permeate any kind of educational endeavor. The fact that student nurses spend about half of their education in clinical settings suggests that educational processes in the field of practice have an impact on how reform intentions are implemented.

The educational aims for nursing become guidelines for *pedagogical practice*. The new aims, stressing the development and formation of professional nursing practice, thus will have consequences for pedagogical practice. For intended changes to occur, important preconditions are: (1) To know *what* to change, (2) to know what the situation to be changed is like, and (3) to know the direction for possible changes. Characteristics of the educational process in clinical settings have not been adequately investigated in a systematic way. It follows that plans for changes in nursing education have been vaguely outlined.

The University Reform in 1977 in Sweden (Högskolereformen) was based on a political decision. Questions related to how to broaden recruitment into higher education, how to decentralize the decision-making powers, how to make an organizational renewal, and how to co-ordinate resources had a most important influence. To analyze the specific needs and preconditions for change within the

health care domain was never a concern at the governmental level, even though movement toward transferring nursing education to the system of higher education had begun among nurses. Thus, an initial assessment of preconditions necessary for health care education to develop in accordance with the reform intentions is lacking.

How "...the relations and pressure of reality should balance the multiplicity and power of ideas" (Richardson, 1978 pp 63-72) is an essential question. Sometimes, however, knowledge regarding the multiplicity of ideas exceeds knowledge concerning the relations and pressure of reality. Poorly known units are hard to balance.

We know from research findings (cf. Section 2.2) that educational situations in clinical settings appears with a sharp contour as problematic, but to judge from what is reported within the area, the contour seems to be dissolved by touch - leaving only an intangible complexity behind.

In a phase of radical changes, as is the case with this reform, the contour probably will be accentuated, thus becoming more obvious and possible to grasp. Knowledge which brings us closer to an understanding of educational phenomena in clinical settings will enhance the awareness of factors that facilitate or constrain sequences of the educational process as they exist in reality. This knowledge should enhance awareness of the germinal basis and growth potential for the reform intentions.

The questions at issue are very generally summarized below:

What are the preconditions in the clinical settings for educational endeavors in which

(a) The content is deepened, focused on health, and firmly established in a view of human beings that stresses holistic (defined) patient care?

(b) The methods used are characterized by an active search for increased knowledge and proficiency, and application of scientific methods to identify and solve health care related problems?

(c) Students strengthen their ability for diagnostic reasoning by learning to value, judge, and decide in complex caring situations which enable them to move towards professional proficiency?

4.1.2 Aim of the empirical study

Current circumstances at different social, organizational, and individual levels will have an impact on the changing course. The Parliamentary decision will have consequences for student A in school B that are not identical with the consequences student C experiences in school D. However, it is not the aim to explain the causal relationships between isolated variables when analyzing processes but to throw light on frequently occurring phenomena, to interpret nature and meaning, and to conceptualize the links between phenomena in terms of conditions and consequences. Core features could be depicted although educational situations vary.

In order to do an empirical systematic investigation highlighting the different questions at issue from an educational point of view, *the aim* of the empirical study is:

- To delineate and analyze actual activities characterizing the educational situations in clinical settings (to make explicit what everyone "knows") by observing teaching-learning situations in the field.
- To conceptualize, in terms of conditions and consequences, core features in the educational processes.
- To identify facilitating potentials and constraining limitations that govern activities in educational situations.
- To generate working hypotheses regarding educational situations in clinical settings that have the potential to enable students to move toward professional proficiency.

4.2 Methodological approach for process analysis

The aim, outlined for the empirical study, caused several considerations as to choice of research strategy, to get the valueladen questions at issue answered. Analyzing educational processes, comprising sequential units occurring and changing over time, demands a strategy which allows the researcher to capture important characteristics of the situations, to judge the nature of different phenomena, and to interpret what the activities represent and express. A search was made regarding research strategy for *process analysis of nature and meaning* in teaching-learning situations.

Thus, the complexity of process analysis was added to the broad problem area. Rather than to start with problem reduction, it was assumed to be more beneficial to enter the broad area using an inductive approach in the natural setting - *a naturalistic approach* - mainly to come close the procedural bent, but also to avoid missing vital aspects and to avoid getting the researcher "...stuck in a loop" (Wilson, 1977), a frequent result if uncharted waters are explored using a deductive approach with predefined, delimiting questions into which to fit the data.

Naturalistic strategies open windows to un-anticipated outcomes - the happy habit of the Serendip brothers, who, as the old legend tells, made fortunate discoveries by accident. Naturalistic inquiry thus would provide an appropriate basis for the search for "hidden potentials", or what Vygotskij once labelled "the zone of potential development", that is, previously unknown conditions and resources for change and renewal.

Bellack (1978), in distinguishing between mainstream scientific (quantitative) and interpretive scientific (qualitative) research, argues that interpretive researchers, by and large, show a careless attitude when they explicate and report their methods, thus

submitting them to critical scrutiny. In view of that critique, a brief summary of scientific naturalistic research approaches will be given in the next section (4.2.1) as background material. The research method used, constant comparative analysis for generation of grounded theory, will be presented in Chapter 5.

4.2.1 Naturalistic inquiry modes

Naturalistic inquiry is a concept often used as an umbrella concept for a range of research approaches with intertwined roots in the traditions of cultural anthropology and American sociology (Kirk & Miller, 1986). It has been used to delineate methods like ethnography, comparative analysis, grounded theory, and for phenomenological approaches and similar inductive strategies which are common methods within the qualitative research paradigm (Berglund, 1983). Having a qualitative research orientation, naturalistic inquiry modes can be perceived within the behavioral sciences as process-oriented research approaches for understanding the nature and meaning of human behavior individually or collectively. It is based on the point that reality is made rather than found (Smith & Heshusius, 1986). Human events are understood in terms of reasons and intentions rather than being explained in terms of causality (von Wright, 1971). To emphasize the contextual influence, research is carried out in natural settings.

Guba has reviewed the variety of attempts made to formulate a definition of naturalistic inquiry (Guba, 1978). In his opinion, Willems & Raush have been most successful. They define, as editors of a collection of research papers in 1969, naturalistic inquiry as "...the investigation of phenomena within and in relation to their naturally occurring contexts" (Guba, 1978, p. 4).

Another way to define naturalistic inquiry is to introduce an opposite concept, (e.g. experimental inquiry) and compare them to find out what the concept denotes. The extent to which the researcher structures the situation and manipulates and controls the variables can be a measure for definition. This was illustrated by Willems and Raush in 1969 (Guba & Lincoln, 1985). Using the figure, Guba himself defines naturalistic inquiry as "...a function of the constraints placed upon antecedent conditions and outputs of the inquiry" (Guba & Lincoln, 1985, p. 83). The modified figure is reproduced in Figure 4.1.

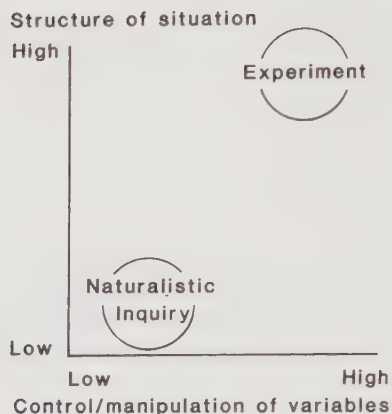


Figure 4.1 Control/manipulation and structur determining domain of inquiry.

The search for the nature of phenomena has implications for the treatment of data . In experimental approaches, predefined categories are used to classify data and to find the number of instances and combinations. In naturalistic approaches the categories are generated by interpreting and reducing units of context-dependent data. The categories are used to understand the nature of instances and combinations (Svensson, 1985).

When compared to each other, many differences exist between naturalistic and experimental research, and the two approaches are usually perceived as guided by contrasting paradigms. However, in reality the dichotomy is rather to be perceived as an epistemological continuum (Berglund, 1985). Le Compte & Goetz (1982, p. 32) also state:

"Ethnographic research differs from positivistic research and its contribution to scientific progress lies in such differences. --- By admitting into the research frame the subjective experiences provide a depth of understanding lacking in other approaches to investigation."

The anthropologist Margaret Mead has also emphasized the complementary point of view for knowledge extension:

"It is only when we realize that there are two distinct and complementary - rather than antagonistic sources of knowledge, that we can fully develop methods appropriate to each other and consider how such methods can serve to support and reinforce each other." (Mead, 1976, p. 905)

The use of multiple methods to support each other (triangulation) are stressed by many researchers in the behavioral sciences (Denzin, 1978; Reichardt & Cook, 1979; Sevingy, 1981). For educational research this approach is described by Cohen and Manion (1980).

The consideration of naturalistic approaches as complementary, rather than opposed to experimental approaches (cf. qualitative vs. quantitative), the claim of compatibility, and the call for cooperation between qualitative and quantitative strategies does, however, not imply that the paradigmatic differences could be bypassed, ignored or converted to simple questions regarding procedural differences. Decreased philosophical distinctions will increase the impression that the two strategies only are variations in technique within the same perspective (Smith & Heshusius, 1986).

Naturalistic research and qualitative research refer to investigations carried out to discover, interpret and understand phenomena. The term "naturalistic" refers to the researcher's attempt to avoid imposing situational structure or to manipulate the variables. The term "quality" connotes the nature and meaning of a phenomenon as opposed to the quantity or amount of it. Naturalistic or qualitative research has its own history and its own rules and is not simply "a residual grab-bag" for non-quantitative issues (Kirk & Miller, 1986).

Research methods used in naturalistic investigations can be characterized as follows:

- * The problem has no distinct formulation.
Concepts, relations, and hypotheses are not stated a priori. When entering the field for study, the researcher is armed only with a perspective on a selected problem area. McMillan & Schumacher (1984), quoting a 60-year-old statement by Malinowski, call the phenomenon "foreshadowed problems" as distinguished from preconceived expectations.
- * The sampling technique is usually purposive (cf. Cohen & Manion, 1980) and multiple data sources could be used.
- * For data collection and recording, different techniques can be used. The examples mentioned below are observation and interview. While participating without intervening, the researcher collects data by observing events (phenomena, actions) as they occur in the dynamic society under study and/or by interviewing the actors. Observed activities are recorded by the researcher in different ways. Some examples are: The researcher can make "a thick description" (Geertz, 1973) of the ongoing process; he can distinguish between transactions (activities in interest of self) and metatransactions (activities in interest of others) (Evens, 1977), and field notes or transcriptions of taped interviews can be ordered as structural descriptions (Schütze, 1983). The research orientation views the process of collecting data as a social act, and asks of investigators that they be as well sensitive, engaged as analytic in the process (Benoliel, 1985).
- * The observed activities are analyzed to capture and interpret the variety of

meanings, reasons, and intentions embedded and expressed in what has been recorded. That can be accomplished in different ways depending on the purpose and technique used, but for each mode the researcher's insight must clearly be separated from the actor's, i.e., to distinguish between the "act meaning" and the "action meaning" (Bellack, 1978). Caws (1974) has developed a 3-model-unit for description and analysis. The operational model (how the person acts in observed situations) is compared with the representational model (how the person thinks and interprets the observed events) and, finally, the explanatory model which includes the researcher's interpretation of the observed events. The situational meaning is analyzed by constantly comparing incidents in ongoing activities (Glaser & Strauss, 1979).

The perspective chosen by the researcher for analysis could be *emic* or *etic* (Harris, 1968). The terms were first used by Pike (1954) to define two different ways used to learn to know people. In ethnography and ethnoscience the term *etic* refers to the researcher's view or interpretation and to universal explanations. The term *emic* refers to the informant's point of view or the meaning recognized by the informant and to local interpretations. It is grounded in language use and expressions (Pelto & Pelto, 1978; Jacob, 1982; Roberson & Boyle, 1984; Leininger, 1985)

Researchers using the emic approach interview the actor to get his/her conscious, rational perception or interpretation of the observed behavior in terms of values, beliefs, intentions, expectations, and purposes. The use of language is an important medium. Within phenomenology this part is judged to be crucial for interpretation and to fully understand the observed behavior. Other researchers let the actors or the interviewee agree or disagree with the field worker's statement. Epistemologically some researchers do not use the emic approach due to irrationality. They perceive the behavioral state as a sufficient focus for interpreting and understanding the interplay between actions, intentions, and contexts and prefer the etic approach. Actors very seldom have the ability to give correct answers, and they fail to articulate their perspectives or to verbalize how they act/acted or should act in complex, real situations. The inconsistency between *say* and *do* is well known (Wilson, 1977). In addition, the purpose may not precede action, the purpose may grow out of action (cf. Eisner, 1979). An unintended consequence is one example. According to the ethnographer Frake, context-sensitivity is a better tool for inquiry than is "... an elaborated guesswork as to what is going on in people's heads". How people think must be understood in the light of the contexts in which they are forced to think. Additionally, the unconscious behavioral determinants are all out of reach for the investigator (Frake, 1980). The phenomenon of self-deception could also influence the actor's perception of his behavior (Mele, 1981).

Using the etic approach, the researcher's point of view and theoretical, conceptual or referential framework is used as basis for interpretation and analysis and should be clearly stated.

If data is collected and analyzed by comparing incidents in ongoing activities, as described by Glaser & Strauss (1979) and presented in the next section, the etic approach is of interest. The focus is not on the individual but on the interactional pattern. The meaning of an incident or event is crystallized by comparing incidents and evoked ideas which are generated from and grounded in the empirical data. The analysis is accomplished through the researcher's interpretation relative to the influence of contextual variables.

- * The findings will contribute to the extension of knowledge by identifying the complexity and nature of existing phenomena, by enhancing the understanding of meaning in human activities, and by bringing about awareness of context dependency.

Naturalistic inquiry aims at discovery, which is easily agreed on, and verification, which is not so easily agreed on as quality assessment is part of the research process. The lack of stringent rules for sampling and data collection in controlled situations, and the use of interpretation instead of objective instruments for rigorous outcome measures in the analyses, have resulted in assumptions that objectivity, and, hence, replicability, accuracy, and generalizability of findings, are haphazard.

Kirk & Miller (1986) have perceived *objectivity* as having two components: Reliability and validity. These components are usually defined to suit the goals and purposes of quantitative research approaches. When phenomena are investigated in terms of causes and effects, reliability and validity measure such characteristics as precision, representativeness in samples, variable control, etc.

When qualitative methods are used, other problems appear which the researcher must handle. The process of human interaction is not adequately expressed as a causal relationship. Processes consist of units with one unit determining the conditions for the next unit. Focusing on causes and effects differs from focusing on conditions and their consequences.

In her book on qualitative analysis in nursing research, Leininger (1985) has discussed the matter in detail and states that different criteria must be used to determine validity and reliability when carrying out qualitative as opposed to quantitative research. She suggests that the criteria for determining qualitative *validity* are:

- gaining knowledge and understanding of the true nature, essence, meanings, attributes, and characteristics of the particular phenomena under study, i.e., the existence and the nature of the phenomena.

Leininger suggests that criteria for determining *reliability* are:

- identifying and documenting recurrent, accurate, consistent or inconsistent features such as patterns, themes, values, world views, and experiences which are confirmed

in similar or different contexts. The instrument for "measuring" validity and reliability is the researcher.

The ability to *generalize* is a key issue for research within applied sciences. Guba (1978), however, views generalizability as the Holy Grail - to be pursued but never quite attained. In the same way Cronbach (1975) states that "...any generalization is a working-hypothesis, not a conclusion".

In discussing qualitative research methods, Leininger (1985) points to the need for new research approaches. She states:

"A new cultural movement is occurring in the way humanists and scientists are philosophizing and discovering the nature of knowledge, reality and human expressions. This movement calls for new ways of conceptualizing knowledge and experiences to discover the interrelatedness of diverse phenomena from a broad, holistic and changing perspective. Understanding our multicultural world and ways of knowing people in different frames of reference is challenging researchers and calling for new research methods and paradigms. (Leininger, 1985, p. 1).

4.2.2 An approach for research in education, nursing, and nursing education

Naturalistic inquiry is not a new phenomenon. To use strategies prescribed within anthropology for educational purposes was, for instance, suggested by Maria Montessori at the beginning of this century (Montessori, 1913). However, the different kinds of strategies under the naturalistic inquiry umbrella have met with new interest during the last decade.

Several researchers in the *educational* field have emphasized the value and usefulness of different qualitative approaches to attain a better understanding of occurrences in the educational process (e.g. Wolcott, 1975; Wilson, 1977; Bellack, 1978; Lutz, 1981; Sevingy, 1981; Battersby, 1981; Wilcox, 1982; Bogdan & Biklen, 1982; Ball, 1982; Parker, 1984, 1986; McMillan & Schumacher, 1984; Allen, 1986). Grounded theory is stressed by Conrad (1982) as a valuable approach to research in *higher education*.

In *nursing*, some researchers also have paid attention to different naturalistic inquiry modes. In some articles during recent years, the contribution to nursing research in general is stressed (e.g. Oiler, 1981; Melia, 1982; Gorton, 1983; Omery, 1983; Roberson & Boyle, 1984; Chenitz & Swanson, 1984; Hodson, 1985; Leininger, 1985).

"In a practice profession such as nursing, improved understanding of the meaning of clients' behavior will enhance nursing judgments and improve nursing care."
(Roberson & Boyle, 1984, p. 43)

Some research studies in nursing have also been conducted using strategies such as ethnography and phenomenology (e.g. the previously-mentioned study by Benner, 1984). In Sweden the phenomenological approach has been reported by e.g. Andersson (1984). The grounded theory approach has been used by Stern (1980); Simms (1980); Degner *et al.* (1981); Melia (1982); Hinds (1984); Kesselring *et al.* (1986). In Sweden the approach has been used in a study by Sandman *et al.* (1986).

Benner's study (1984), aims to extend our knowledge about skills in nursing practice. That study also has implications for nursing education. Using phenomenological strategies, Benner has identified assumptions and expectations related to context-dependent behavior observed in clinical settings. In addition she has described performance characterizing different levels of development from novice to expert. By interpreting nurses' accounts, Benner has been able to identify teaching/learning needs at each level of development. She has also been able to capture the essence of expert practice - "...the connoisseurship in nursing". When discussing reliability, Benner states that each clinical situation has to be judged independently. The uniqueness and the context-dependence are the heart of the matter for grasping reality in clinical settings.

Melia (1982) has, in her study of students' accounts of their work and training, used the grounded theory approach. Using issues raised by the students, Melia developed six categories which highlight the two distinct versions of nursing the students are exposed to: The idealized version, scientifically presented to the students as "the nursing process", and the version students encounter in the real world where the approach to nursing care is ruled by "getting the work done". The consequences found were that most students abandon the goal of professional nursing performance stated by the school in favor of meeting short-term goals spelled out on the wards. The students' ambivalence toward the need for a theoretical basis for nursing care raised the question as to whether or not professional nursing is attainable.

In a study conducted by Degner *et al.* (1981), the constant comparative analysis ended with twelve categories describing the field of life and death decision-making. On the basis of that study, recommendations are given for improvements in the health care delivery system.

Stern (1980) has used the grounded theory method in her study of stepfather's integration into the existing family system made up of mother and child. She has made this statement:

"I think ---the use of grounded theory is especially helpful, even necessary, in attempting to study complex areas of behavioral problems, where salient variables have not been identified."
(Stern, 1980 p. 20)

For this study with the purpose of delineating - not evaluating - activities by capturing the essence in educational situations and with the purpose of understanding the

variety of activities observed, the grounded theory approach seemed to provide an appropriate basis for bringing existing practice into conceptual awareness.

The method of constant comparative analysis for generation of grounded theory has been recommended as a strategy for research in both education and nursing. What a tool for research in *nursing education*!

4.2.3 Aim for choice of methodological approach

The research questions and the aim of the empirical study pointed toward choosing a naturalistic strategy for analyzing educational processes in clinical settings. The constant comparative analysis method for generation of grounded theory was found to be an adequate strategy for recognizing core features and relevant indicators in educational processes. The method was developed by Glaser & Strauss in the 1960's and is as earlier mentioned presented in the next chapter. During the last decade, this method has slowly gained recognition within the nursing domain, especially for investigating uncharted waters or gaining fresh perspectives on familiar situations (Stern, 1980). The method has been highly recommended for that purpose, but is seldom used.

Thus, to study educational processes it was decided not only to use the method, but also

- to assess its utility and to discuss the pros and cons of using this approach for analysis in this study.

As we, in the words of the physicist Capra (1983), are "...at the turning point" regarding choice of research strategies, this study would be a contribution to the overall knowledge regarding the use of qualitative methods to analyze the nature of and meaning in observed activities. Grounded theory is only one way to approach that kind of problems, but it has a place in nursing research and in educational research.

PART II

PLANNING AND ACCOMPLISHMENT

*“Respect the nature of the empirical
world and organize a methodological
stance to reflect that respect.”
(Herbert Blumer)*

5.1 Constant comparative analysis for generation of grounded theory

Among the different strategies available for qualitative analysis of process data, the research approach chosen for this study, mentioned earlier under the naturalistic-inquiry umbrella, was the constant comparative analysis for generation (discovery) of grounded theory, often referred to simply as *grounded theory*. The approach was presented in the 1960's by two sociologists, Barney Glaser and Anselm Strauss, and has been used by them in their research on the sociology of health and illness. Studies of the process of dying and of pain management are two examples. Interest in "grounded theory" has increased outside the sociological domain during the last decade and the strategy is slowly gaining recognition within the research of other disciplines such as education and nursing .

The approach has roots in symbolic interactionism, a perspective in empirical social science. Blumer (1969), who coined the term "symbolic interactionism", has described research from this perspective as a down-to-earth approach to the scientific, naturalistic study of human group life and conduct. The central point of concern is the meaning of things, formed in the context of social interaction, and derived at through a process of interpretation. According to Blumer, "meaning" precedes action, is formed in interaction, and guides activities.

It was decided not only to use the research strategy in the empirical study but also to increase the overall knowledge of the strategy, and to assess the pros and cons of using it in this study for analyzing educational processes in clinical settings. Thus, the strategy is thoroughly presented in this section. The conceptual and analytical framework and the key features as they are outlined principally in the works of Glaser & Strauss (1979), Glaser (1978), Schütze (1983) and Strauss (forthcoming), are for the purpose of understanding structured and summarized after the capsule definitions of comparative analysis, grounded theory, and constant comparative analysis for generation of grounded theory. The summary is by no means a guideline for doing research but an attempt to clarify some procedural steps in the research endeavor when, as in this study, the researcher collected data using field observations in the classical ethnographic way. To avoid misunderstanding, it should be stressed that the summary has bearing on this kind of study.

* *Comparative analysis*

is a general method utilized in sociological and anthropological research. The method has been elaborated in the work of Glaser & Strauss (1979) and some of the procedures are systematically worked up in the work of Glaser (1978). The

methodology is used for analyzing processes. Empirical data from the field of study are continuously compared in the search for core features.

**Grounded theory*

could be defined as a theory not deduced from logical assumptions, but derived or generated from empirical data and obtained through constant comparative analysis.

**Constant comparative analysis for generation of grounded theory*

is a research approach that is similar in many ways to the other naturalistic approaches mentioned earlier, but also different. In this approach:

- Alternate abductive (Peirce, in Denzin, 1978); inductive and deductive strategies are used. The sampling technique is called "theoretical", i.e. guided by emerging categories.
- Data collection, coding, and analysis are carried out simultaneously.
- Variation is searched for and built into the analysis.
- The categories are not predetermined, they emerge during the investigation by comparative analysis.
- The concepts, hypotheses, and theory emerge from and are modified by continuously comparing. Thus, they are grounded in the empirical world.

According to Strauss, the grounded theory approach is not really a specific method or technique. "It is a style of doing qualitative analysis, which includes a number of distinct features such as theoretical sampling and certain methodological guidelines such as the making of constant comparisons and the use of a coding paradigm to insure conceptual development and density" (Strauss, forthcoming).

The strategy has the potential to allow the researcher not only to describe the nature of incidents in ongoing activities, but also to capture the dynamic process sequences. The strategy allows the researcher not only to interpret an activity in the light of the actor's rationale for acting, but also to judge the nature and interpret the meaning of activities by constantly comparing conditions and consequences in recurrent, related incidents. Thus, the researcher is able to recognize core variables. The strategy allows the researcher to generate conceptual knowledge by exploring related empirical phenomena, by discovering the links between them, and by interpreting the situational meaning in the variety of behavioral states.

Some qualitative research methods describe the combination of data collection, analysis, coding, and categorization as steps which follow each other in chronological order. Glaser & Strauss, however, describe these steps as a *joint endeavor* in an ongoing analytical process. Collected data are immediately analyzed, coded, and categorized. The labeled codes direct further data collection.

According to Schütze (1983), the researcher works in an intertwined pattern with two main procedures. When the empirical phenomena occur and are observed in the field they are concretely recorded as the researcher's observational field notes (or

transcribed tapes of interviews). The first main procedure is to structure the descriptions into sequential units. In this way, processes are discovered as they occur over time in descriptions depicting conditions and consequences. In the second phase, when the structural descriptions (die strukturelle Beschreibungen) are compared and analyzed as to meaning and context influence, the core feature is conceptualized. An analytical abstraction (eine analytische Abstraktion) is the outcome of what has been observed as empirical phenomena in actions and interactions. All through the research process, the two procedures operate simultaneously. To find and conceptualize the links between the abstractions in terms of conditions and consequences is to generate theory.

In their writings, Glaser & Strauss use the nouns "concept", "code", and "category" almost interchangeably. However, a code is usually a named indicator and a property of a category, while a category is usually the property of a core concept. Grounded theory is based on an indicator-concept model to be described later.

The procedural steps in the research proces as outlined principally in the works of Glaser & Straus (1979), Glaser (1978), Schütze (1983) and Strauss(forthcoming) are presented below *in summary* .

* *Sampling*

The sampling technique is purposive. It is ruled by achieving maximum exposure to different aspects of an empirical phenomenon for the purpose of making comparisons. Initially the researcher collects a wide range of data that are pertinent to the questions which took the researcher to the field. Incidents, which have been analyzed and coded, delineate emerging categories and/or concepts, and direct further sampling. The sampling is later delimited through the use of theoretical criteria. Commonalities and differences are contrasted to clarify an aspect until the emerging category/concept is saturated. At that point, sampling of that category/concept ceases. The process is labeled *theoretical sampling* as the carefully chosen items are controlled by the emerging theory.

The vital points and joint movements in the process of generating grounded theory are

* *Data collection*

Any kind of data can be used, qualitative or quantitative, obtained through field observations, interviews, documents, etc. If, as in this study, field observation is chosen, the incidents as they occur in the social context provide the data to be collected. Glaser & Strauss emphasize the importance of being sensitive and thinking about data in theoretical terms by using the expression *theoretical sensitivity* frequently in their writings.

* *Recording*

Observed empirical events could be recorded in different ways. The researcher could

write his field notes as a detailed *description* of the observed situation. He could also make shorter field notes, where the core content of the situation is recorded as *observational notes*. When an observational note is analysed in an early stage and provisionally coded, it is recorded as a *theoretical note*. During data collection and coding, evoked ideas about the nature of emerging categories are recorded as *memos*. The memos are not utilized until the categories are finally linked.

* *Analyzing and coding*

Analyzing and coding are two phases of handling the concrete empirical data until they are merged into a saturated abstraction. The descriptions are fractured and *structured* by being sliced into their *sequential units*, a procedure especially stressed by Schütze. Incidents discovered in the units and/or in the recorded observational notes are analyzed, coded, and contrasted as to content, dimensions, similarities, differences, and consistency of meaning by being constantly compared with one another and with previously defined codes: Incident to incident, indicator to indicator, indicator to category/concept and, finally, concept to concept. Based on an *indicator-concept* model, indicators are accepted and named only if they, in the words of Glaser & Strauss, "...fit, work and have relevance" for an emerging category or concept. Indicators must be generated from data. They must "earn" their way into the theory.

Coding encompasses different steps toward making *analytical abstractions* from the structured field notes. The coding procedure is discussed in detail by Strauss (forthcoming) as a matter of utmost concern for the researcher since genuine coding is the most difficult part of the research process. It is not only putting a name-tag on an indicator, but doing so in light of the contextual influence. For example, under what conditions does the indicator indicate something, and what are the consequences when the indicator indicates something? Distinctions are made when the researcher looks for dimensions of an observed phenomenon by asking himself generating questions such as "to what degree?", "to what extent?", etc. By using that kind of *coding-paradigm*, the researcher is looking for the main theme, the main concern for those involved, i.e., core variables to compare.

Strauss differentiates between three steps in the coding procedure. In the beginning the analyst "opens up" the inquiry by asking very general questions about observed activities, which have been exhaustively recorded in the field notes. The questions have a "springboard" function and force the researcher to fracture and structure the collected data, to capture the essence, and to interpret what actually is happening in the described situations. Provisional codes are the outcome of this *open coding*. Aroused ideas and questions are summarized and recorded as memos throughout coding.

When a core code is emerging (discovered), the analyst *delimits the area* (*axial coding*) and the emerging code or category directs further theoretical sampling for comparisons. Axial coding must be carried out in a very disciplined way - only

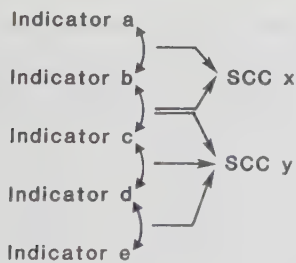
around the actual emerging code. The researcher looks for variations and dimensions in terms of conditions, consequences, strategies, and interactions. Phenomena in observed situations, which have been collected as data, are supplemented with collected experiential data. They are coded in the same way and if they "...fit, work and have relevance" they are accepted and integrated.

Later in the analysis, the coding is *selective*. The researcher is coding only for variables which are related to and could be integrated in the core category/concept. Theoretical sampling is carried out more systematically. Variation in one category is contrasted to variation in the core category.

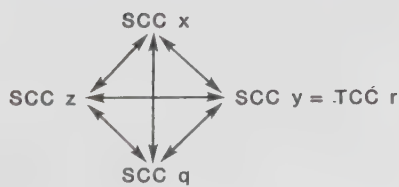
Trained, accustomed, and confident in the coding process, the first steps of comparisons are based on memory and done very rapidly by the analyst. This process of mental coding results in shorter field notes i.e. theoretical notes.

Thus , recurring, related, and accepted indicators discovered in the structured descriptions form what Glaser calls "substantive conceptual codes" (here abbreviated SCC and illustrated in Figure 5.1). The borderlines of the SCC's are further delimited by comparing new indicators until the code is saturated (Figure 5.1a) - a decision made by the researcher. Substantive codes are grounded in the overall outcome of structural descriptions.

The SCC's are then related to one another (Figure 5.1b), and are reduced or modified as a result of further selective theoretical sampling and comparative analysis. In this process of analytical abstraction, the linkages between SCC's are in focus and the theoretical conceptual codes (here abbreviated TCC and illustrated in Figure 5.1b) are formed, highly dependent on how the structuring has been carried out. The two phases are illustrated in Figure 5.1.



5.1a Substantive coding.



5.1b Theoretical coding.

Figure 5.1 Substantive and theoretical coding.
SCC and TCC=Substantive and theoretical codes.

Moving toward saturation of core concepts in the comparative analysis requires constantly moving "backwards" to new data collection, and coding in a direction decided by the emerging concept. It also implies elimination of codes if they are not sufficiently supported by the data as the research process progresses. *Saturation* implies reshaping, reintegrating, reexamining. This grounded integration can be perceived as similar to the "bias-random-walk" model, used in biochemistry, where

"... all variables are constantly present in unordered covariance, but each used and ordered only as the process occurs and needs the variable to proceed, after which it is dropped back into covariance." (Glaser, 1978, p. 78).

A *core concept* is characterized as being very central. It relates to many codes and categories, and it relates easily. It accounts for a large portion of variety, one of the hallmarks of the grounded theory mode. It represents phenomena which appear frequently, and it has clear implications for a more general theory.

After saturation and integration, the concepts are compared to the initial observational and theoretical notes and to the sorted memos. The *memos* are like mirrors in which the concepts can be reflected. Thus, a conceptual elaboration, as opposed to a logical elaboration, provides the ground for generation of hypotheses and theory. The researcher with a multidimensional perspective on a process has one eye in the telescope and one eye in the microscope. He/she is guided by theoretical sensitivity when fracturing the data, when recognizing and interpreting core features, and when rebuilding the fractured data in light of the contextual influence.

Thus, *one* (of several) hypothesis or explanation of ongoing occurrences is developed.

"What remains is a grounded theory based on and validated by empirical evidence."
(Conrad, 1982, p. 243)

Conveying *credibility* to research findings which have been qualitatively analyzed has been discussed in the section on naturalistic inquiry (4.2.1). When grounded theory is used, it is crucial that the findings be presented in a way which allows the reader to "experience" the observed situations and to follow the procedural steps in the analysis in order to understand how the concepts were obtained from the data.

"The key to validity and hence to credibility in grounded theory lies in theory viewed as a process - the continual interplay over time of data collection and analysis, principally through comparative analysis and theoretical sampling." (Fagerhaug & Strauss, 1977, p. 315)

5.2 Aspects of activity

In the beginning of an observational field study, a *sensitizing device* for structuring the amount of data inflow is helpful to support the researcher while he/she is developing sensitivity both for pattern recognition and for discovering features in ongoing occurrences.

In the 1960's, Dickoff & James developed a survey-list of elements of activities for goal achievement. The list is included in their structure of a theory in a practice discipline with the aim to give recognition to areas, about which awareness is wanted but also for creating new knowledge.

"The survey list gives at least one mode of rendering more manageable the admittedly wide and rich and deep scope of nursing activity." (Dickoff & James, 1968, p.201)

Dickoff & James view an activity as having six aspects corresponding to six questions about activities. This structure provides an observer with six ways to look at an ongoing event in order to determine what is going on in the situation. In the survey-list, the questions and aspects are as follows:

1. Who or what performs the activity?	Agency
2. Who or what is the recipient of the activity?	Patency
3. In what context is the activity performed?	Framework
4. What is the end-point of the activity?	Terminus
5. What is the guiding procedure of the activity?	Procedure
6. What is the energy source for the activity?	Dynamics

The list is more elaborate than the usual list of activities which includes Doer-Context-Means-Ends in order to broaden the perspective and to encourage a reflective, innovative attitude (Dickoff & James, 1975). Why the question "What is the starting point of the activity ?" is lacking is, however, not obvious.

Thus, an activity can be defined as the way an agent in a given context decides to act and interact as a response to a prescription, rule, or principle in order to accomplish a stated goal. The investigator is able to observe performed activities and interpret the meaning of them by comparing different and similar approaches for goal achievement without knowing the agent's rationale for acting or interacting in a specific way (cf. the etic perspective presented in Section 4.2.1).

It was decided to use the survey-list as a device to support the researcher in structuring the observations at the beginning of this study.

6 EDUCATIONAL SITUATIONS

6.1 Educational situations in cancer care

The concept of clinical setting is very broad, and although the dynamic contextual variety as described in Section 2.1 is similar in most settings, differences can be noticed. Some of these are described since they determined the choice of clinical settings for the study of educational situations.

One difference is related to the length of time for interaction with the patient. Due to the very nature of a disease, patients are referred to the emergency room, the surgical ward, the radiotherapy department, the geriatric ward, etc. That means that the encounters between patient and staff could be episodic, distributive, or continuous. Another difference is the individual emotional response the nature of the disease evokes due to the threat embedded in the diagnosis. That means that the patient's state of emotional distress could be found, roughly outlined, in all nuances from high to low (Figure 6.1).

The educational goal to stimulate the development of scientific awareness and holistic patient care must be applicable in all clinical situations in spite of such differences.

Situations where the time available for interactions is limited and the patient's state of emotional distress is presumed to be high (Situation A in Figure 6.1) represent peak situations in nursing care in which ongoing activities become more apparent and distinctive. That kind of situation is found in outpatient departments, emergency departments, radiation therapy departments, and intensive care units.

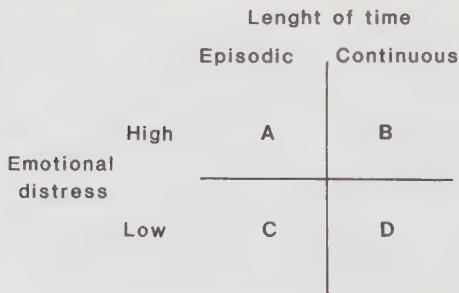


Figure 6.1 Encounters of patients with staff members characterized by length of time and state of emotional distress.

Radiation therapy departments where patients from oncology units, other wards or outpatients are diagnosed and/or treated for their cancer disease were chosen as clinical settings corresponding to the criteria in Situation A. They represent core situations for teaching and learning because they are one kind of peak situation for caring.

A diagnosis of cancer creates very powerful emotional responses from most patients. Verbally expressed feelings of anxiety, fear, and depression are mingled with unusual, bizarre, or neurotic patterns of behavior - another way to express the same feelings and to reveal that mobilization of coping mechanisms is occurring. The National Cancer Institute in the USA has, in "Coping with cancer" (NCI, 1982), divided the most common concerns of cancer patients into four general issues:

1. Alienation - the fears of abandonment and isolation.
2. Mutilation - the feeling of worthwhileness related to physical change such as loss of hair, loss of body organ.
3. Mortality - the fear of death and the fear of death-related pain.
4. Vulnerability , or loss of control - the feeling of total helplessness and dependence.

If the rigors of treatment as radiotherapy or chemotherapy raise new concerns threatening the body state and coping mechanisms, the complex and varied reactions are intensified. The phenomena of general fear of radiation and the anxiety of suffering a treatment-induced nausea and emesis period are such stress factors. Peck & Boland (1977) have shown that few patients expect radiation therapy to be curative and that the degree of anxiety is increasing during treatment.

A patient with a diagnosed or suspected cancer can be referred to the radiation therapy department and/or the nuclear medicine department for diagnosis and therapy. The department represents a highly technological environment ("high tech") where the demands on and the needs for highly personal interactions ("high touch") are equal to the needs and demands for quality assurance in treatment interventions - high touch in high tech environment. Radiation used for cancer treatment may focus on cure or palliation and could be used alone or in combination with surgery or chemotherapy.

The length of time spent in the department for diagnosis or for a course of curative or palliative treatment can vary from a few minutes to an hour, but the average encounter of patient with staff member on single or repeated occasions is very short. The patient's specific needs and demands have to be assessed and judged in the time available for interaction, and a plan for intervention has to be designed for skilled and caring performance giving the patient confidence, comfort and safe treatment.

6.2 Student groups involved

After the first year of general health care education, students in Swedish higher education health care are separated into specialties such as general health care, operating-room nursing, diagnostic radiology, or oncology (cf. Chapter 1). It follows that the Swedish students involved in this study, trained in departments of radiotherapy, are going to be nurses in oncology (therapy radiographers). Choosing a specialty within the domain of medical radiology means that the students enter a new field of experience, since education until now has concentrated on more traditional nursing procedures. The students have not studied natural sciences since leaving compulsory school nor have they been exposed to this kind of medical technology.

Students in the American health care educational system who want to specialize in radiotherapy enter a generic program with a duration of two or four years. Natural sciences are a topic from the first day, and students are exposed to radiological technology from the very beginning. Nursing procedures are learned and practiced concurrently (The American Society of Radiologic Technologists, 1980). The two-year program leads to an associate degree, while the four-year program leads to a baccalaureate degree.

Compared to the Swedish system, many similarities and differences exist between educational programs. The chosen research strategy (Section 5.1) stresses the importance of making comparisons in order to maximize the credibility of generated concepts. One part of the study has been carried out in the USA. The comparisons are made to emphasize similarities and differences between emerging categories and are not used for comparative analysis of different educational systems. For core recognition in encounters characterized by time limitation and high levels of anxiety, it could be illuminating to contrast different cultural contexts and different educational programs to enhance understanding of educational processes in clinical settings within health-care education in Sweden.

During the years 1983-1986, the researcher spent approximately five months with the students in clinical settings at radiation therapy departments. Every day 10-15 educational situations were observed. The selection of situations to be observed was purposive (theoretical sampling) and guided by the emerging categories/concepts (cf. Section 5.1).

For data collection, students in the following programs have been observed:

- * 2 year program in Sweden. In the changing phase due to the educational reform.
- * 2 year program at colleges in the USA, private schools, and federal schools.
- * 4 year program at universities in the USA.

6.3 Summary

Clinical settings have differences and similarities. The length of time available for interactions between staff members and patients is variable. Short encounters characterize the high-technology radiation therapy departments where radiation is used to treat patients with cancer, a serious disease known to evoke very strong emotional responses. These distressed patients must be cared for according to their individual needs and demands on skilled and caring performance during the short encounters. These situations that represent core situations for caring as well as for teaching and learning were chosen for the field study, as the educational goals are supposed to permeate all kinds of educational endeavors.

Education for therapy radiographers abroad is not similar to the Swedish education. This fact provided an opportunity to compare and contrast performance at different educational levels in different cultural contexts. In order to maximize the credibility of emerging categories (cf. Section 5.1), the study was carried out in Sweden and in the USA. The USA was chosen since the educational system there provided examples of 2-year and 4-year educational programs with goals similar to the Swedish programs before and after the reform.

Thus, educational situations at radiation therapy departments in different countries have been the focus for the field-study. All dimensions of performance are reflected in the encounters. These include the staff members' teaching and instructing activities while caring for the cancer patients as well as the students' learning activities and strategies.

7 ACCOMPLISHMENT

7.1 The foreshadowed field

As described earlier, it was decided to use a naturalistic approach define and analyze *educational processes*. The method of constant comparative analysis for generation of grounded theory (Glaser & Strauss, 1979) was chosen and complemented with Aspects of Activity (Dickoff & James, 1968) as a sensitizing device (Chapter 5). The study was carried out as an ethnographic field-study. The data to be collected included activities/interactions performed, verbal/nonverbal communication, etc. These were observed in situations as they occurred in the short encounters between patient, staff member, and student.

Although this kind of approach is not pre-structured by an *a priori hypothesis*, it is obvious that the researcher does not enter the field a true *tabula rasa* (Wilson, 1977). It is important to emphasize that

"...we all create some kind of order out of what we experience and observe, and that that order will be decided partly on our knowledge of the context and partly as a result of our back-ground and experience in other spheres." (Robertson, 1982, p. 553).

The problem area is with Malinowski's word "foreshadowed" (McMillan & Schumacher, 1984). Background and experiences are of importance for any kind of research enterprises. That is what guides the researcher and brings him/her to the field. Background and experiences could, however, be used differently in the research process depending on how the research question is posed, how the aim for the study is outlined, and what method has been chosen for the study. *Experiential data* are used during the phase of making analytical abstractions in grounded theory, given that what the researcher *accomplished* in the field was guided by and grounded in *empirical data*. Peirce (Denzin, 1978) has stressed the crucial role experiences play in analysis by suggesting that the concept of induction sometimes should be replaced by the concept *abduction*.

In this study, the foreshadowed area, the orientation or the conceptual, referential framework has been outlined in Chapters 1-3. Some general features regarding the concepts of *educational processes*, *competence development and formation*, *health*, *holistic patient care*, *role development in clinical settings* and *professional nursing practice* were discussed. Chapters 1-3 could be summerized here as follows:

The transition of health care education in Sweden to the system of higher education indicates that new goals are assumed to permeate teaching-learning

situations. In this study, the goal of scientific awareness has been related to models of academic professional development in general and to the changing structure of nursing as a profession in particular. The goal of a holistic view of human beings has given rise to an attempt to identify and analyze the concept. Features characterizing professional proficiency have been outlined.

Reforms and changes are often "... proposed and initiated without sure knowledge of the settings they are presumed to improve" (Lortie, 1975, p. vii). Such being the case, it became a challenge to enhance the knowledge of activities characterizing teaching-learning situations in clinical settings. The educative process has been viewed in the light of cognitive developmental theories and structured by drawing on stage models for competence development toward abilities for diagnostic reasoning and clinical judgment. Competence as product and process has been considered.

The teaching-learning situations in the clinical context are often discussed and reported as exemplifying theory-practice dichotomies. The pros and cons of that kind of dichotomy for role development have been highlighted.

The problem area and the field of study are well known to the researcher, a nurse and a teacher involved in school administration, and also "foreshadowed" by an accumulated knowledge in pedagogy. Most nurse teachers "know how it is". However, a systematic study within Swedish health care education of teaching-learning situations in clinical settings characterized by short encounters of staff with patient, as is the case in radiation therapy departments, has, as far as is known by this researcher, never before been carried out.

7.2 Entering the field and persevering

Before entering the field, the researcher has to decide on his/her degree of involvement in the situations to be observed. The observer role can be seen on a continuum according to degree of participation. The different types of *participant observation* are listed in most handbooks. For this study a position on the continuum was chosen where the observer is involved, participating in a role which exists only while the study is conducted and where the research interest, presented in advance to everyone in the field, determines the degree of participation (Ball, 1982; McMillan & Schumacher, 1984).

The central source for knowledge about *strategies in the field* has, in this study, been the book in which Schatzman & Strauss (1973) describe events the researcher is presumed to encounter and handle while working in the field. Hammersley & Atkinson (1983) and Germain's (1979) ethnography "The Cancer Unit" have been two other sources.

Getting access to the different radiation therapy departments I visited did not cause any problem. For many years I have been involved in the education of therapy radiographers in Sweden, and my visit to the USA was arranged in cooperation with the U.S. Federal Bureau of Radiological Health, Department of Health and Human Services. The first and very important rule for a field researcher is to establish good human relations and his/her identity in the field for study. A short written description which everyone would be able to understand stated the problem area, the purpose, and method of my study. That information was distributed to the departments in advance. When I arrived at the departments, the information was repeated verbally. Personnel and students I met with were all extremely interested and stressed the importance of research in education. Everyone was happy to take me around, to show me the equipment and facilities, and to discuss educational matters with me. When I presented the study, I got several questions like, "What are you going to measure?" It was hard to explain to most of them what I wanted to observe and how to do it. The spectrum of receptivity was broad - with one exception: the students immediately grasped the message.

Although a bit suspicious and confused, staff members gave me their *consent*. There was no threat embedded in having a person who just wanted to observe what the students were doing at the department. As for the students, they were very interested. Even if staff and students gave me their consent, I did not know for sure whether they would allow me to observe everything. Evidently that was an unnecessary apprehension. With only a few exceptions, I never felt that someone was acting in an unusual way because I was present. They all very quickly became accustomed to being observed. Since I never took notes in their presence, they perhaps felt less uncomfortable.

Ethical considerations concerning involved patients were taken into account. Not having the patients' informed consent could be questionable, since the patients were unable to refuse to be involved. It was, however, impossible to get the patients' consent, since most encounters were short. I met with an average of 15 patients each day. Since many different persons such as the physician, the physicist, other radiographers, and students participated in the different situations, my presence as a nurse-teacher could not give rise to questions about unethical performance. When I judged it convenient and/or necessary, I told the patient about my reason for being present. In one hospital in the USA it was the student who excellently solved the problem by taking the initiative himself. He said to every patient, after saying hello, "Today Gertrud from Sweden is visiting us. Isn't that nice? Do you mind if she is present? Do you have relatives in Sweden?"

In the field I initially observed the patterns of interaction in situations where students were involved - I *watched, listened and recorded*. I systematically searched recurrent and related educational situations, in which I expected to find and discover incidents which would highlight some aspect of the problem area. Data collection thus was

guided initially by the research questions, later by the emerging categories. Data collection was accomplished by recording ongoing occurrences and situational incidents.

I "shadowed" the students in a variety of situations. At the beginning, observations were recorded every half hour, but increased experience in field work expanded the periods between observations. Data were collected for about 150 days during 1983-86, and 10-15 educational situations were observed each day. I spent an average of three or four hours a day in the departments observing educational endeavors during the short encounters not only when cancer patients were diagnosed and/or treated, but also in situations where students were directly instructed by preceptors. The situations are illustrated in Figure 7.1a-b.

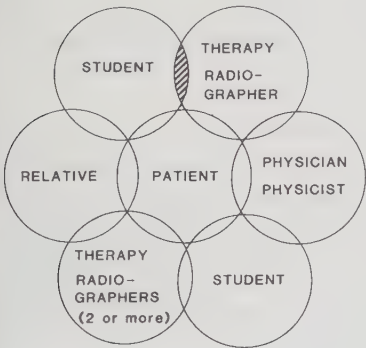


Figure 7.1 a Direct.

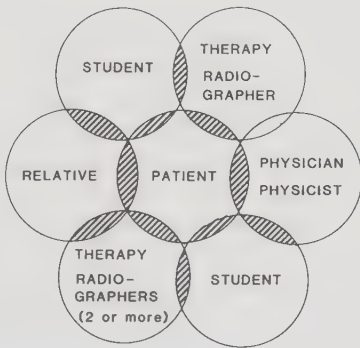


Figure 7.1 b Indirect.

Figure 7.1 Direct and indirect teaching-learning situations in radiation therapy departments.

I have observed staff/student/patient activities

- * in the diagnostic situation at nuclear medicine departments:
Waiting for the patient, informing the patient, giving intravenous isotopes, taking patients to the room for examination and diagnosis, carrying out the examination, taking the patient to the physician, meeting the next patient, and so on
- * in the simulation situation where the treatment field is calculated (a time consuming procedure):
Meeting with the patient, informing the patient, taking the patient to the simulation room. Calculating the field for the decided dose with or without

computer, taking x-ray films, discussing perspectives, adjusting the field, and preparing casts for immobilization.

* in the treatment situation:

Meeting with the patient, taking the patient to the treatment room, informing the patient, making the setup for the patient, giving the radiation dose, taking the patient out of the treatment room, making new appointment for the patient, meeting with the next patient, and so on. Treatment was given to an average of 40 patients/ treatment-machine/day at the departments I visited.

In some situations, I also asked questions about details discussed with the staff members or with the students and answered their questions. *Field notes* were recorded and ideas stimulated and catalyzed by the observations were also recorded as *memos* to be utilized later in the analysis. After several weeks in the field, familiarity with the technique for coding increased my confidence, and I proceeded to "mental coding," that is, the ethnographic descriptive field notes were replaced by directly precoded short sentences or *theoretical notes*.

Open coding is the very opposite of using preconceived categories, and for this beginner the need for a tool to structure the observational procedure manifested itself the very first week. The survey-list of elements of activity, developed by Dickoff & James and presented in Section 5.2, was attached as a structuring and *sensitizing device* and was in the beginning used to organize the amount of data inflow to which I was exposed. The questions were continuously repeated:

- Who performs the activity? -Who is the recipient of the activity?
- What is the guiding principle of the activity? - What is the end point of the activity?- In what context is the activity performed? - What is the energy source of the activity?

These questions made it easier to look at the events systematically without restricting opportunities to make the observations unprejudiced. Thus a situation was observationally scanned and recorded in field notes.

Upon leaving the department after three to four hours, I went to an isolated place where I could concentrate and work with the collected data either as exhaustive *descriptions* or as *short sentences*. When an incident appeared often and highlighted some dimension of the problem area, the coded indicator was accepted as a property of an emerging category. Analyzed, compared, and precoded empirical indicators were then transferred to a wall chart for coordinating and/or rearranging emerging clusters.

The *role of observer* is combined with some problems. Most of them are described in any study using participant observation as technique for data collection. The problems of this study are discussed in Chapter 9, but the ones I found most crucial were the temptations to extrapolate, to make premature closures or conclusions before

observations, and to make logical instead of conceptual elaborations in the beginning of the coding process.

7.3 The immediate coding process

To code what has been recorded as ethnographic evidence in observed situations requires several phases in the research process (cf. Section 5.1). Open coding, delimited coding, and selective coding are all means to enable the researcher to make analytical abstractions of the empirical data.

In the initial phase, the use of open coding to discover indicators of observed events is firmly linked to the identification of ongoing processes as such. Structuring the descriptions is a basic, simple maneuver which sharpens the researcher's sensitivity and detective ability as to what the text represents. Premature codes are eliminated, serendipity is more salient, negligence better avoided, and dominant processes easier to recognize. "Slicing" the descriptions into sequential units of processes is especially emphasized by Schütze (1983). However, the same event could also provide data which could be used for delimited coding, that is, the discovery of phenomena strengthening a core category which by that time is emerging in the field notes from other observed situations.

To illustrate how the immediate coding process progressed, two cases of observations are presented in this section. In rendering the cases, the stream of experiences in the observed situation is reconstructed, but the reconstruction is firmly established from the field notes. Case I was recorded in the beginning of the study, Case II at a later stage. They represent common, easily recognized teaching-learning situations in clinical settings at radiation therapy departments where cancer patients are diagnosed and treated.

The observations are first reproduced entirely. Following that, the immediate coding process is explicated. In observing Case I, the patient's activities were in focus. Thus, the patient was given an assumed name - Ms. Anna Witzenhaus. In Case II, the observations focused on activities from the student's point of view, therefore the student was given an assumed name, Undine.

7.3.1 CASE I

**** Ethnographic fieldnotes (I) on an educational situation**

Encounter: Student nurse-oncology nurse (therapy radiographer)-patient

Case: Anna Witzenhaus

1. Ms. Witzenhaus was waiting.... She sat in an armchair among other patients in a waiting area in the cancer clinic. Some of the patients were scheduled for radiation therapy, others were scheduled for isotope examination. These interventions have

different time durations which influences the "by turns" treatment sequence. This system was not made known to the patients who waited. The patient next to Ms. Witzenhaus expressed her dissatisfaction with not being cared for "in turn". Ms. Witzenhaus nodded.

2. Two months ago the 45-year-old Ms. Witzenhaus was operated on for a kidney disease, but during her rehabilitation something had "gone wrong". Now the surgeon had referred her to this department for an examination. The referral noted that cancer was suspected. Several hours earlier Ms. Witzenhaus had received an intravenous injection of isotopes which by this time should be detected in the area for investigation to give guidance for the diagnosis.

3. Due to her recent surgery, Ms. Witzenhaus was familiar with the hospital atmosphere and routines. However, she had never been to this department before. In silence she looked around at the other patients, but concentrated on looking toward the door through which white-dressed staff members walked in and out, sometimes escorting patients in or out of the treatment area. The magazines at the table in front of her did not catch her attention.

4. Suddenly a student nurse entered the waiting area, looked at a piece of paper in her hand, and announced, "Anna Witzenhaus". Ms. Witzenhaus got up from the chair, looked around at the other patients, and was escorted by the student nurse through the door and down a corridor to the examination room.

5. With lingering steps she entered the room containing the equipment. The student nurse kindly asked her to take off her blouse and bra and to lie down on the bench "...over there". She pointed at the bench under the detector, a gamma camera about 7 decimeters in diameter.

6. Ms. Witzenhaus undressed and looked for something to cover her breasts. She could not find anything, so she crossed her arms over her chest and moved slowly toward the bench with questioning eyes, as if she suddenly was uncertain of where and how to lie down. While Ms. Witzenhaus was undressing, the student nurse had approached the oncology nurse (therapy radiographer) on duty this day. She was adjusting/checking something at the control panel, and the student nurse watched the procedure in silence.

7. On the students' rotation schedule on the wall, one could read that this student now had been in the department about three months (one third of her educational training in this clinical setting) and that this week was her second at this "station". The nurse had earlier in the day told the student to bring in the patients for examination and to stay close to her during the examinations and watch what she was doing.

8. The nurse finished the adjustment, said, "Hello", and nodded to Ms. Witzenhaus

who was just lying down on the bench. Then she showed the student nurse the referral chart on the desk and made some comments on how to proceed since she was commissioned to function in the preceptor role. Both nurses moved toward Ms. Witzenhaus. In a few sentences the oncology nurse explained for the patient what would happen in the next twenty minutes and how the machine would trace the injected isotopes and make photos. She also told the patient not to move during the session.

Ms. Witzenhaus' skirt and pants were pulled down a decimeter by the student nurse. The nurse projected the area for examination and pulled down the mobile equipment which then covered the naked part of the patient's body.

9. As preceptor, the nurse was eager to demonstrate in detail how to handle the control panel, which was placed obliquely over the patient's head. She pointed to the different indicators and described how to interpret and record information on the screen. Her instructions were oriented toward how to act at different phases of the examination. She pressed the "ON"-knob and the sound from the scanning detector was audible.

Ms. Witzenhaus gazed at the nurse and student and tried to turn her head since they were working behind her. Her eyes showed tension, and she seemed to register every word spoken. She did not speak, and nobody spoke to her.

10. After twenty minutes the examination was finished, the machine removed, and the patient kindly asked to dress, sit down, and wait for the physician. The nurse signed the protocol and demonstrated the photos for the student while commenting on the technical quality. The patient listened on tenterhooks. The nurse left the room to find the physician and to give him the photos. The student broke the silence by saying something about the sunny day. Ms. Witzenhaus immediately made use of the opportunity. The words did not cease until the physician entered the room and asked the patient to come with him. Ms. Witzenhaus left the room.

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The ten paragraphs above are the reconstruction of the field notes. In the first stage of analysis when the case is sliced into sequential units, another pattern appears which will be illustrated below.

The structuring of the description encompasses the following procedures (*open coding*):

- (1) Cutting out the units: Unit A, unit B, unit C etc.
- (2) Naming the units: Unit A.: Waiting for examination. Unit B.: Escorting the patient, etc.
- (3) Analyzing and provisionally coding by looking at conditions, consequences, strategies, and interaction.

These procedures are illustrated in the first part (Part 1) of the case of Anna Witzenhaus.

The second part (Part 2) of the case of Anna Witzenhaus is used to show the reader how this structured description with its provisional codes is reflected in emerging categories (*delimiting coding*).

Case I: Anna Witzenhaus. Part 1 (*open coding*)

A. WAITING for examination

Ms. Witzenhaus was waiting.... She sat in an armchair among other patients in a waiting area in the cancer clinic. Some of the patients were scheduled for radiation therapy, others were scheduled for isotope examination. These interventions have different time durations which influences the "by turns" treatment sequence. This system was not made known to the patients who waited. The patient next to Ms. Witzenhaus expressed her dissatisfaction with not being cared for "in turn". Ms. Witzenhaus nodded.

Two months ago the 45-year-old Ms. Witzenhaus was operated on for a kidney disease, but during her rehabilitation something had "gone wrong". Now the surgeon had referred her to this department for an examination. The referral noted that cancer was suspected. Several hours earlier Ms. Witzenhaus had received an intravenous injection of isotopes which by this time should be detected in the area for investigation to give guidance for the diagnosis.

Due to her recent surgery, Ms. Witzenhaus was familiar with the hospital atmosphere and routines. However, she had never been to this department before. In silence she looked around at the other patients, but concentrated on looking toward the door through which white-dressed staff members walked in and out, sometimes escorting patients in or out of the treatment area. The magazines at the table in front of her did not catch her attention.

CODING UNIT A:

The central feature here is patients waiting together. Some lack knowledge about the institutional rules for queuing up, some are insecure about what is going to happen next, whereas others are familiar with the system since they get treatment here every day (*coded: different dimensions of awareness - open and closed*).

Usually hospitals provide waiting patients with journals and magazines to read or equip the waiting rooms with an aquarium, television, music, etc. (*coded: distracting attention*), but in this waiting area the journals provided did not catch the observed patient's attention. Under what conditions could patients' attention be distracted?

The patients did not talk to each other very much. When they did, they focused on turn-taking (*coded: restricted communication*).

The fact that the patients are met by staff members and brought to the rooms for diagnosis or treatment creates an invisible dividing line between professionals and patients (*coded: bordering function*).

The narrative also displays a background construction in this slice regarding, for example, the patient's age and surgery. The information is given from a different source of knowledge. It is not obtained through experience in the actual situation, but by reading the patient's referral chart. This additional information about Ms. Witzenhaus states some of the factual conditions for ongoing activities.

Just knowing that something is "wrong" and that this "something" could be cancer indicates that the patient is in some sort of limbo situation. Since she had received the isotope injection several hours before the examination, her waiting time had been heavily extended.

Ms. Witzenhaus is both familiar and unfamiliar with the clinical setting she is in. The narrative does not reveal what kind of information the patient had been given, nor does it reveal the patient's thoughts. An assumed consequence of being in a limbo situation is: Thoughts of pain, of facing illness, of suffering hair-loss, of being close to death, of impact on daily living, etc. We know nothing about the patient's trajectory position in the coping process, but we know that the trajectory phase was never explicitly assessed when looking at the situation as an educational situation. Ms. Witzenhaus was facing uncontrollable forces that were to set conditions for her life to come with which she would have to cope (*coded: coping trajectory position*).

B. ESCORTING the patient to the examination room

Suddenly a student nurse entered the waiting area, looked at a piece of paper in her hand, and announced, "Anna Witzenhaus". Ms. Witzenhaus got up from the chair, looked around at the other patients, and was escorted by the student nurse through the door and down a corridor to the examination room.

CODING UNIT B:

When suddenly the waiting time for Ms. Witzenhaus is over, her meeting with a member from the "other side of the border" is impersonal - a girl in white announced that "Anna Witzenhaus" was the next patient. The announcement was a means for identification which ignored common interactional patterns such as approaching, addressing, introducing, greeting, etc. (*coded: personal identity, broken sequential order*).

The patient was escorted in silence. The student was told to escort the patient, a simple task which for the patient is an important interactional start. Was the student told how to fulfil this task? Presumably not, since almost the same procedure was repeated by her preceptor later on. Does high work load and time pressure force a practitioner to eliminate professional features of interplay? Is escorting regarded as marginal to the situation and thus not considered (*coded: implicit learning*) ?

C. CROSSING THE BORDER to the professional action scene:

With lingering steps she entered the room containing the equipment.

CODING UNIT C:

To find the higher predicate, "lingering", this early in the descriptive field notes means that the observational phase of the research process has been interrupted for a second by the very fast process of mental coding. Without recording in the field notes that:

- The patient is noticing the technical equipment and does not know if the examination is going to be unpleasant.
- The patient has been through many thoughts during her waiting period and now is close to a decisive moment in her life.
- The patient is one of several today for the staff members - they are not ignoring and not engaging when the patient enters the room, thus the patient does not know how to act to meet unexpressed expectations.

The participating researcher is coding the way the patient enters the room as representing uncertainty and hesitation, and jotting down in the notes that the patient enters the room "with lingering steps" (*coded: lingering, uncertain, hesitating*). Using a higher predicate is a way to denote that "lingering" is the consequence of several conditions. But "lingering" also denotes a condition for further interaction, for example increasing or decreasing sensitivity among those involved in the encounter.

D. GETTING READY for the examination: I (undressing, moving)

The student nurse kindly asked her to take off her blouse and bra and to lie down on the bench "...over there". She pointed at the bench under the detector, a gamma camera about 7 decimeters in diameter.

Ms. Witzenhaus undressed and looked for something to cover her breasts. She could not find anything, so she crossed her arms over her chest and moved slowly toward the bench with questioning eyes, as if she suddenly was uncertain of where and how to lie down.

CODING UNIT D:

The action scheme in slice D of the narrative describes how the patient was told to act and how she acted (undressed, moved to the bench). That no garment was available to cover the patient's nakedness is a main feature in this slice since the sequential order of a basic common interactional pattern once more is interrupted. It is a difficult situation for the patient since interaction schemes are veiled (*coded: broken sequential order*).

E. GETTING READY for the examination II (watching)

While Ms. Witzenhaus was undressing, the student nurse had approached the oncology nurse (therapy radiographer) who was on duty this day. She was adjusting/checking something at the control panel, and the student nurse watched

the procedure in silence.

On the students' rotation schedule on the wall, one could read that this student now had been in the department about three months (one third of her educational training in this clinical setting) and that this week was her second at this "station". The nurse had earlier in the day told the student to bring in the patients for examination and to stay close to her during the examinations and watch what she was doing.

CODING UNIT E:

Two activities are ongoing at the same time - getting ready means different things for different persons (to undress, to move, to watch) and this slice discloses how the student nurse made herself ready for the examination by watching her preceptor (*coded: attention to machinery work*), while Ms. Witzenhaus was undressing and moving toward the bench.

A background unit appears in this slice, providing additional information concerning the student and instructions given. Something crucial is happening as the student nurse makes a judgment and decides to act, not in favor of the interactional component interplay, but in favor of the interactional component intervention. Which are the criteria for her judgment? Which are the consequences of her decision? What constrains an attempt to integrate intervention and interplay? (*coded: clinical judgment*).

F. ADDRESSING the patient

The nurse finished the adjustment, said, "Hello", and nodded to Ms. Witzenhaus, who was just lying down on the bench.

CODING UNIT F:

The fact that the activities are intertwined makes it difficult to slice the units of action. Finishing the adjustment belongs to slice E, but the nurse is obviously addressing the patient while she is finishing her work at the control panel (*coded: intertwined activities*). A new staff member unknown to the patient now enters the scene of action (*coded: personal identity*).

The outcome of this structuring and open coding thus could be summarized:

A. *Waiting* for examination. Coded: Distracting attention, restricted communication, bordering function. The codes: dimensions of awareness (open and closed) and coping trajectory position are here given as examples of how two of Strauss' developed concepts (awareness and trajectory) have been utilized.

B. *Escorting* the patient to the examination room. Coded: Personal identity, implicit learning, broken sequential order.

C. *Crossing the border* to the professional action scene. Coded: Lingering, uncertain, hesitating.

D. *Getting ready* for the examination I. Coded: Broken sequential order.

E. *Getting ready* for the examination II. Coded: Attention to machinery, clinical judgment.

F. *Addressing* the patient. Coded: Intertwined activities, personal identity.

Case I: Anna Witzenhaus. Part 2 (*delimiting coding*)

The next part of Anna Witzenhaus' case is here utilized to demonstrate other phases of the coding procedure: Delimiting, or axial coding, and the initial phase of analytical abstraction for theoretical coding.

By the time of this observation, two categories, *adapting/adopting* and *avoiding*, were emerging out of data from similar situations and out of experiential data. *Adapting* also emerged from data from reported research on nursing education where adapting often describes the pattern of a passive student. *Adapting/adopting* as an emerging category in this study still encompassed a variety of students' active as well as passive behaviors. The emerging core category *avoiding* had, until this observation, been recorded repeatedly in the field notes of teaching-learning situations as a description of the preceptors' activities. Now the question was whether this situation could reveal some general features regarding *adapting/adopting* and *avoiding* or some not yet observed dimensions or variations when compared and contrasted to the other situations. For example, were there different kinds of adapting/adopting and avoiding or specific kinds of adapting/adopting and avoiding? Could the field notes provide data concerning conditions for and consequences of acting in an avoiding and adapting/adopting way? Would coded activities in this situation "... fit, work and have relevance" as properties of the emerging core categories and by that contribute to delimitation and saturation?

To perceive interaction as, on one hand, a way of acting for technical procedures or a way of doing (intervening), and, on another hand, as a way of acting for interpersonal procedures or a way of being (interplaying), earlier touched on in slice E, was accepted from the literature, since it reflected what was focused on in the situations from an educational point of view. However, it should also be noted, that in observing the triad, nurse-student-patient, the interactions between nurse-student, nurse-patient, and student-patient were mixed, but the observational field notes were restricted to occurrences in these interactions which could be related to teaching and learning. Obviously, the different interactions included components of intervening and interplaying, that is, the way a goal for an activity (to teach, to learn, to treat, to diagnose, etc.) is reached.

* Regarding INTERVENTIONS the nurse (therapy radiographer) was active. She adjusted (the control panel), showed (the student nurse), described and explained (for the patient), told (the patient not to move), demonstrated (in detail), pointed (to different indicators), projected (the area), ran (the machine), described (how to

interpret, how to record), demonstrated (the photos), commented (on the technical quality), and instructed (how to act). The instruction was excellent when guiding the student nurse through the technical procedures by descriptions of *how to act* at different phases of the investigation. The emphasis on technical procedures was guided by very high standards of *accuracy* for safe treatment. Accuracy is an aspect of *quality assurance* for the patient. But was the student's accumulated knowledge ever *assessed*? How was the preceptor informed, what did she know about the student's learning needs, about her learning capacity, or about her learning style? Thus, what was the aim for teaching-learning efforts?

Many instructional sessions had shown a similar pattern where knowledge was presumed to be transferred through exhaustive descriptions. Accuracy, having the highest priority, is an easily recognized condition for these kinds of verbally repeated reminders. Many staff members in the preceptor role also had pride in their work and were happy for the opportunity to share their knowledge, to *transfer* their knowledge to the "next generation" in *the same way* they were acting. Students were perceived to be the empty bowls to be filled. Usually preceptors were found to be very *skilled and knowledgeable*, knowing exactly what was expected as the outcome of their occupational role. This preceptor was no exception. But what about the outcome of the educational role? Instructions usually had been observed to start here and now and were not related to the student's assessed needs, which consequently would have allowed the student to be an *active participant* in the educational process, to *be challenged* to think critically. The interactional pattern of preceptor-student was reversed since answers were given without questions - a *reversed sequence*. Dialogs in the educational situations were rare. In other field notes, the presence of a patient was recorded as an impediment for teaching efforts. That is not the case in this field note. Though *accuracy ruled*, the reversed sequences pointed toward *avoiding*.

The student nurse was told (to bring in patients, to stay close), was shown (different indicators), was instructed (how to act), watched (what the preceptor was doing), and listened (to the instructions) in silence. These activities were carried out *attentively*. These descriptions could point toward a passive adaptation to a situation. But since we know from the field notes that the student was experiencing her second week at this "station," she could still have some basic knowledge missing, and thus could have actively chosen this strategy for learning. Since the same student was observed in other situations, her activity was interpreted as a conscious strategy. The *active choice* of a strategy thus implied the active way of *adopting*.

* Regarding the component of INTERPLAY in patient interaction, the pattern was totally different. The instructions never touched on "how to handle" the patient. Something was *missing* in the teaching-learning situation. Something was not verbally expressed or demonstrated. It was passed over or *avoided*. Though it was seen as legitimate to instruct the student in how to act in view of information (static) on the screen, it was not considered legitimate to instruct the student how to act in view of information (dynamic) given by the patient's actions. No information is found

in the narrative regarding Ms. Witzenhaus' trajectory position in the coping process. The nurse's assessment of the patient's state of anxiety or uncertainty was an *implicit activity*, a part of her occupational role which she did not articulate. Interplay was thus integrated and expressed through intervening. In this situation, it was mediated by the way the preceptor acted toward the patient during the examination. When she made an assessment and a clinical judgment concerning the patient, the student had to draw her own conclusions by observing her preceptor's activities. When the patient entered the room, the student could observe the preceptor's addressing the patient as an intertwined activity. When the nurse turned to the patient, she kindly told the patient about the examination (*polite, calm*). *Inconsiderately*, she ignored the facts that she was working behind the patient, that the patient showed signs of tension, and that the shy patient had to cover her naked breast with her arms. The outcome of the lesson concerning interplay was expressed by the preceptor's way of being. The student could take it (*adapt*) or leave it. This student was ambivalent, but she did not *break the rules and the silence* until she was left alone with the patient (*concerned*). Activities based on information from the screen as well as from the patient was in this situation observed to be close to rules and regulations (*by routines*). Exceeding these boundaries was *avoided*. *Accuracy* had, as earlier mentioned, the highest priority and influenced the situation by governing some activities. For the patient, accuracy was equal to care of high quality.

The short encounter situation in a radiation therapy department is in a way a situation at the fringe for lessons in how to care for the patient. On the other hand, it is central since it is the only applied situation from which the oncology nurse student (therapy radiographer) can learn. The *organizational frames* contribute to reducing the opportunities for this kind of interactional work - expensive machinery, high work-load, accuracy-ruled responsibility, etc. In other observed situations, staff members often mentioned *time-limitation* as an impediment to a more empathic patient interaction. The issue was discussed in terms of uneasiness and guilt toward the patients, but almost never as a goal for educational efforts.

The emerging category *avoiding* was reinforced by coded data in this situation as compared to situations showing a similar pattern. A concatenation of conditions pointing toward avoiding were identified and interpreted in analyzing the ongoing processes. Avoiding was here found to be a consequence of organizational features. Accuracy governed the activities, ordered them, and turned them into routines. High work-load and time limitation were often mentioned, but not in this situation.

Avoiding was also found to be a consequence of inconsideration. The most salient indicators of inconsideration pointing toward avoiding were the patient's obvious but unnoticed signs of tension and the reversed sequences in which teaching-learning occurred. Avoiding thus became a condition for the transfer of skilled nursing practice as to challenging the student and allowing her to be an active participant in the educational endeavor.

Avoiding also became the condition for observed intertwined activities which appeared in a broken sequential order as to addressing, informing, intervening, etc., i.e., the condition for the indifferent way in which the patient was cared for by the student's situational role model. Although reinforced, the category *avoiding* was not yet saturated.

The emerging category *adapting* was also reinforced by the coded data from this situation, but not to the same degree as the category *avoiding*. The situation did not offer data specific enough to delimit the concept, but it supported what was earlier noted with a question mark: That adaptation to a situation could be not only a choice to remain passive, to resign, but an active strategy, judged by the student to be remodeling and thus beneficial for goal achievement, i.e., *adopting*. This student twice was observed to make clinical judgments: One decision was in accordance with what was expected of her, to stay close to her preceptor; the second time her judgment involved a breaking of the rules.

Memos :

Evoked ideas about the nature of emerging categories were recorded during the coding procedure as memos, thus separating them from the empirical data and from interpretations made on the basis of observations. Memos are set aside and not utilized until the categories are finally linked. Memo-writing is a means that forces the researcher to stay on target in the empirical world, thus decreasing the temptations to make premature logical elaborations.

In the case of Anna Witzenhause, the following memos were written:

- * The outcome of a teaching-learning process in the clinical setting is not predictable nor is it evaluated. Is it due to the frequent shift of preceptors?
- * Basic knowledge in the educative process is a prerequisite for teaching efforts aimed at providing experiences which are challenging to the individual student and which are conducive to learning.
- * In situations where accuracy is the alpha and omega, accuracy overrules consideration.
- * How are students prepared to learn from activities which are implicitly carried out?
- * Is the main feature in the avoiding performance a lack of assessment and planning, i.e., a lack of diagnostic reasoning?
- * The patient's expectations are seldom taken into account. Assessing the patient's needs is usually done from the staff members' point of view. From an individual patient's point of view, the emphasis on empathic interplay could be overestimated.

7.3.2. CASE II

In the next example given, four teaching-learning situations are described. As in the case of Anna Witzenhaus, the descriptions are reconstructions firmly built on recorded field notes. The slicing into sequential units for coding is not demonstrated here. These situations are instead utilized to highlight the search for differences, variations, similarities, and dimensions when comparing the previous case with other situations.

*** Ethnographic fieldnotes (II) in an educational situation*

Encounter: Student nurse-oncology nurses (therapy radiographers)-patients

Case: Undine

Background unit:

Student nurse Undine was in the last phase of her education. This week she was practicing in one of the radiation therapy rooms where cancer patients were treated for their disease for periods lasting four to six weeks.

The treatment required that the total radiation dose was divided and delivered in a series scheduled on different days or on the same day usually to different treatment fields. Thus, if on the same day a tumor was radiated from different angles, the machinery was rearranged once or twice during the treatment. An average of twenty-five persons on out-patient or in-patient basis were treated every day using this machine.

The control room was situated outside the isolated treatment room which was equipped with the linear accelerator. The door to the treatment room was closed during the few minutes of fractioned radiation dose delivery. The patient was left alone, but was observed by the staff members through a small viewing window in the wall and on a TV screen. It was also possible for the patient to attract attention by a microphone in the treatment room and to communicate with the staff members during actual treatment time.

Two or three nurses (therapy radiographers) were stationed at the machine cooperating in preparing the patient, the machinery, the casts for immobilization used to keep the patient in the same position for every treatment, preparing the room, delivering the dose, observing the patient during the treatment, recording, etc. When they went for a break, other nurses took their place. The course of events occurred very rapidly.

** Situation 1:*

The patient came in a wheel-chair from one of the wards in the hospital. He was very sick and looked around in a preoccupied manner. Undine helped one of the nurses (A) to get the patient on to the treatment bench.

The light in the room was dimmed to make it easier to project onto the treatment field at the neck. The nurse measured and corrected, and Undine watched the

procedure. The light was put on again, and while doing so the nurse said: "We are leaving you now, Albert, but we'll be back soon".

We all left the treatment room, the door was closed, and the second nurse (B), who was sitting at the control panel started the machine, observed the patient through the window, and made some recordings.

After two minutes the machine was turned off, the door opened, and we went back to the patient. Undine dimmed the light and observed the nurse (A) moving the mobile machine to project onto the field from another angle. With a short comment to Undine, she finished the adjustment and turned on the light.

We left the room and the treatment started. The same procedure was repeated a third time. When it was over the patient complained that the treatment had lasted so long this day. No one commented on that. Undine and the nurse helped the patient sit up on the bench, but he became dizzy so the nurse told him to remain seated on the bench.

Standing close to the patient, she started preparations for the next patient. Undine hesitated a moment, left the patient, and took down the next patient's cast for immobilization from a shelf in the room.

The patient stretched his leg and tried to reach the footstool without success. In a fatigued voice he asked how many more times he had to come for treatment. The nurse was uncertain and went to the control room to read the patient's chart.

While the nurse was searching for information, Undine approached the patient, bent toward him, and asked him kindly if he felt better now. The patient nodded and Undine helped him to the wheelchair. She pushed the wheelchair toward the waiting area. While passing the control room, the patient was informed by the nurse how many times he would be coming back.

The nurse went into the treatment room to continue preparations for the next patient. When Undine returned from the waiting area, the nurse (B) at the control panel asked her to explain something on the computer which the nurse couldn't figure out. Undine explained and

* Situation 2:

...went into the treatment room. The setup for the next patient was almost finished. A lady, short in stature and dressed in a hospital coat, entered the door to the treatment room. The nurse (A) addressed her: "Hello, Barbara." The patient smiled and said "Hello", took off the coat and moved with naked breast toward the bench. She jumped up, laid down, and adjusted herself into the cast. Undine dimmed the light and the nurse, holding an adjustment tool in her hand, was just starting to project the field onto the patient's neck, when she discovered that the patient had forgotten to take off her glasses. The patient expressed how unhappy she was at being so absent-minded and Undine put the glasses on a table.

The same procedures as in the first situation were repeated - the nurse projecting and adjusting in silence, the student nurse doing one thing here, one thing there. When the third field had been treated, the patient jumped down from the bench. The nurse reminded herself that the earplugs had been forgotten and said so to the patient. The

patient became very anxious and apologized once more for being absent-minded. She asked what would happen. "Nothing - it does not matter," the nurse answered. The patient dressed and prepared to leave. Undine asked if she could find the way to the ward on her own, and the patient nodded in silence. They said goodbye to each other and the patient left the room.

*** Situation 3:**

Undine prepared the setup for the next patient by herself since the nurse (A) had gone for a break. With a sure eye and a calm manner she did what had to be done to prepare the next treatment before the patient entered the room: She rotated the linear accelerator to get the beam on the patient's back since a metastasis in one vertebra was to be treated.

Supported by a rullator and escorted by a staff nurse from the ward, the next patient entered. He had never before experienced radiation therapy, but did not express anxiety or interest by the way he acted. He was completely occupied with undressing, getting up on the bench, and lying down on his back assisted by the ward nurse.

A new oncology nurse (C) entered the room. She looked around in silence checking what Undine had done and fixed a rack with a film cassette over the patient's front while telling him what she was doing. She asked the patient not to be afraid as the treatment would not give any pain. Finally she told him that he would be left alone during the treatment, but that he would be observed continuously through a window in the wall. The patient nodded.

After the treatment the patient was helped to sit up. He looked around, and asked in a confused way about the film cassette over his chest since he had trouble with his back. Undine explained for the patient how they had rotated the machine. The patient was satisfied with the answer and asked whether or not he would have more treatment today.

While the patient was escorted out of the treatment room by the ward nurse, Undine told the patient that he would not be coming back this day.

Situation 4:

In the control room Undine collected some information regarding the next scheduled patient.

While she was reading the chart the patient came, greeted the personel in the room, and went directly and quickly into the treatment room. She took off her cardigan, blouse, wig, and glasses and placed them on a chair. She moved to the bench, laid down, and adjusted her head into the cast. She was almost ready before Undine and nurse (C) entered the room to project the field.

Leaning toward the patient with one eye on Undine, the nurse commented on the patient's home-knitted cardigan in a kind and polite way, and deliberately let Undine complete the projecting work.

During the treatment period, while Undine and the nurse were both in the control room, the nurse gave Undine some information regarding the treatment of this patient, which Undine noted in a small memo-book she had in her pocket.

The door was opened and the nurse entered the room two steps behind Undine. Undine approached the patient and told her that she now had only one treatment left. The patient moved down from the bench expressing how nice it should be not getting treatments any more. While she put on her blouse, cardigan, wig, and glasses, the nurse and Undine slowly started to prepare the room for the next treatment. The three of them commented on the holiday close at hand. The patient said her good bye and left the room.

In analyzing and coding the above described situations and comparing teaching-learning features with what was described in the case of Anna Witzenhaus, some differences appeared.

Regarding the educational climate, a central feature in Situations 1 and 2 is that the student nurse Undine was almost cut out of the situation. The nurse (A) was very active and did everything by herself. She did not show or instruct the student, evaluate what the student could accomplish, nor share her knowledge with the student (*coded: ignoring*). The student's function was to be an aid to the nurse - doing one thing here, one thing there, putting on and dimming the light, opening and closing the door, etc. (*coded: aiding*).

In the third situation, when the nurse (A) went for a break, nurse (C) let Undine make the preparations for the next patient on her own (*coded: delegating responsibility*). Thus, nurse A acted very differently in her preceptor role compared to nurse C and compared to the nurse in the previously described case. The conditions shifted as this nurse (C) was eager to support the student in carrying out the different tasks by her own, and she did so by watching over her (*coded: supporting independency*). She also used the waiting minutes to make some comments regarding the treatment of the patient. Since Undine made some notes, it must have been new knowledge to her.

Although the interactional sequential order as to addressing, informing etc. was broken in Situation 3, the patient was approached very carefully by the nurse in Situations 3 and 4 and by Undine in Situation 4 (*coded: considering*). In Situation 1 Undine approached the patient as the nurse's aide, in Situation 4 with her own responsibility.

Another central feature was that several persons were involved in the described situations. The variations in the way different persons acted in the role of supervising the student (*coded: educational discontinuity*) demanded that the student possess a considerable amount of flexibility (*coded: coping with discontinuity*). It also showed the variety of patient activities which the student experienced (*coded: variety of interplay*).

Regarding goal orientation, the performed activities thus became short term. The situational meaning was interpreted as exposing the student to all the different treatment situations as they appeared in these real life situations (*coded: context dependent variety*). The change of staff members in the preceptor role had the

consequence that features in different situations were not explicitly linked (*coded: fragmented knowledge*). Undine was involved in learning to design actions in accordance with existing governing rules, a phenomenon found in many other situations and earlier coded as *single-loop learning* (Argyris & Schön, 1982).

The situations exemplified different dimensions of the concept of *awareness*. The patients in Situations 2 and 4 were familiar with the department, with the staff members, and with the treatment procedures. They felt "at home" and it did not bother them to undress, be naked, or to put the wig on the chair (*coded: familiarity*).

The patient in Situation 1 was also familiar - he compared this treatment with other treatments - and although he complained, he did not protest since he was too sick and too tired.

Another pattern appeared in Situation 3. This patient had never before experienced radiation therapy, but he was completely occupied with undressing and moving. He did not show any signs of anxiety, only of *confusion*. Compared to the previous case, none of the patients entered the room in a way which was coded "with lingering steps." The patients in these situations were at different stages in their *coping trajectory position* - a phenomenon never explicitly assessed and thus not discussed with the student.

Crossing the border and the *bordering function* coded in the Anna Witzgenhaus case did not exist in these cases. Scheduled patients, who had already received some treatments, came almost directly into the treatment room without being escorted from the waiting area. Their familiarity with what was going to happen seemed to increase their confidence. The patient unfamiliar with the situation was escorted from the ward directly into the treatment area by the ward nurse.

Memos:

- * Experiences provided in the clinical setting which are conducive to learning should basically be oriented toward the long term. They should be complemented by short-term goals if the aim is to teach the student to become reflective under real-life conditions.
- * Is the reflecting ability sharpened by discontinuity?
- * To enhance the ability for diagnostic reasoning demands opportunities for comparing, linking, judging, etc., i.e., to analyze and reintegrate existing governing rules.

7.4 To utilize existing knowledge

For a researcher using the grounded theory approach it is the alpha and omega that collected data are *empirically grounded* and that the *categories emerge* from data.

Such scrutiny is equally important when using *experiential* data. Past experiences and skills derived from earlier research should not be ignored because of usual research-guiding principles which regard experiential data as biasing the research. To use that kind of data is not, in the words of Strauss, a license to run wild with further data collection. Coding and memoing serve as genuine, explicit controls over the researcher's bias. Experiential data are essential to provide a wealth of provisional suggestions for making comparisons, finding variations, and increasing theoretical sensitivity. "... mine your experiences, there is potential gold there" (Strauss, forthcoming).

In traditional research it is important to start with *reading the literature* of the field to the fullest extent possible, and to deduce a theoretical framework for the research endeavor from that literature. Hypotheses to be tested and verified are stated and then data are collected that correspond to the preconceived conceptual framework. When using the grounded theory approach, the procedure is reversed. The aim is to generate concepts from empirical field data. A literature review before entering the field could affect the researcher's sensitivity for what happens in observed situations. It could contaminate the researcher's thinking with preconceived concepts and thus force data collection in the wrong direction. It is also impossible when generating theory to know in advance what literature needs to be covered. Reviewing the literature is a late phase in the grounded theory approach, and its purpose is to relate what has been generated to what is existing (Glaser, 1978).

In this study the researcher has made a *deviation* from that canon. Having experienced the incongruity of the guiding principles in relation to the ongoing research process, it became a challenge to scan an approach which corresponded to the current research endeavor. It became a challenge to slice the ongoing research process in sequential units; to look at conditions, consequences, and strategies; to analyze the procedural steps; to articulate the deviation; and to present what could be coded: *utilizing contamination* - a deviation or an innovation.

When the foreshadowed field was highlighted in Section 7.1, it became obvious that "contamination" is inevitable. The important question, however, is how the researcher treats the fact that he/she has been contaminated during the time for "incubation", how the source is handled, and how uncontrolled growth in the wrong direction is prevented. The utility of experiential data has been stressed in terms of an abductive approach. The researcher's competence to handle field data and experiential data is never questioned in the grounded theory approach because coding and memoing control the emerging theory, and conceptual density is dependent on being empirically grounded.

The extreme richness embedded in theory developed until now and published in the literature could be converted to data and handled in the same way. That is what has been done in this study. It is not a question of deducing concepts in a positivistic way and letting the concept guide the research process. It is less a question of using concepts or ideas derived from the literature as cement between the bricks of emerging categories. It is more a question of exposing oneself as a researcher to the wealth of suggestions for making comparisons that are displayed in the literature. However, first and foremost it is a question of sharpening the researcher's sensitivity. To ignore the existence of available knowledge and to avoid its guidance until the final phase of the research process was in this study experienced to make the inhalation phase of breathing cumbersome. The researcher got the feeling of being locked out and unable to turn the curiosity-key in the lock.

Any deviation from the canons is up to the individual researcher using the grounded theory approach to decide on and defend. The issue must be dealt with in a mature way, and the utility and consequences of being "contaminated" and working with an informed sensitivity must be considered. If existing knowledge is utilized, the scope and depth of the research endeavor will change. However, the researcher works with the same scrutiny as when data is accepted on the basis of "...working, fitting and having relevance" for the emerging theory.

Part of what has been outlined in Chapter 3 emerged in parallel with the observations, but all of the time it was the generating process, grounded in the empirical data, which gave direction to the literature to be reviewed and to be accepted for facilitating the research endeavor. Making maximum use of existing knowledge is illustrated below with one example. In the analysis of the case of Undine (Section 7.3.2) is written:

"Undine was involved in learning to design actions in accordance with existing governing rules, a phenomenon found in many other situations and earlier coded as single-loop learning (Argyris & Schön, 1982)".

The reason for reading the book by Argyris & Schön was the uncertainty the researcher experienced regarding what was missing in so many observed situations. In their writings, Argyris & Schön discuss very clearly the issue of adopting and changing the governing rules to design actions. They also discuss further the issue of maintaining and changing the field of constancy. That aspect of the emerging categories was not clarified by comparative analysis of the observations, but the reading shed light upon the dark spots. The dimensions of looping - single and double - became sensitizers of great value in the following observations. These were not carried out as a search for occurrences fitting a *preconceived concept single-looping* but as a search for similar and different situations to be contrasted with the *emerged concept single-looping*.

PART III

FINDINGS, DISCUSSION, AND CONCLUDING CONSIDERATIONS

“They (the researcher and the work) are immensely interactive in the process “...in which both of them acquire a form and order they did not first possess” (Dewey, 1934). The researcher – will be in the work, emotionally as well as intellectually, and often be profoundly affected by experiences engendered by the research process itself.”
(Anselm Strauss)

8 FINDINGS AND CONCLUDING CONSIDERATIONS - THE EMPIRICAL STUDY

The purpose of collecting and analyzing data on "what everyone knows" has been

- to present, with a procedural emphasis, some perspectives on familiar situations in nursing education, and by a systematical approach bring the nature and meaning of educational processes in terms of condition and consequences into conceptual awareness i.e making implicit knowledge explicit (Bolton, 1977), and
- to generate working hypotheses regarding educational situations in clinical settings that have the potential to enable student nurses to move toward professional proficiency. Thus, the aim of the empirical study outlined in Section 4.1.2 would be achieved.

From field notes on teaching-learning situations, empirical data was collected, analyzed, and integrated into emerging categories. These categories reflect central features of the educational processes in clinical settings where students learn from what they are exposed to and experience.

The patterns of interaction in the situations have been regarded as

- *interventions*; defined as the interactional component for doing (what) and as
- *interplay*; defined as the interactional component for being (how) (cf. Section 3.2).

In observing the triad, nurse-student-patient, the patterns of interaction included several aspects. Depending on the goal for the activity, an observed event could be perceived as an interplay between nurse and patient and at the same time as an educational intervention between nurse and student.

Activities and interactions have been observed in the different kinds of educational situations that characterize clinical settings: In *direct* teaching/learning situations, defined as situations when a staff member in the preceptor role and a student are involved in an educational endeavor; and in *indirect* teaching/learning situations, defined as situations where student nurses learn from what they are exposed to, where a patient is present, and where at times the triad student-staff member-patient is extended to include the physician, the physicist, other staff members, the patient's relatives, etc.

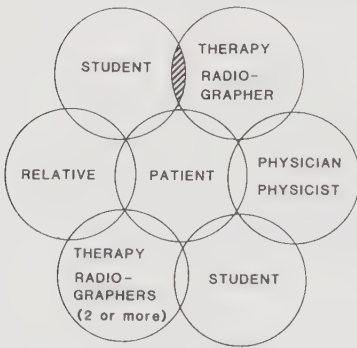
Section 8.1 presents the *substantively coded* activities in educational situations in one kind of clinical setting characterized by treating patients with a serious disease during short encounters of patients with staff. Section 8.2 comprises what

analytically has been *abstracted*, delineating and interpreting core features in these situations. In Section 8.3 the emerged *categories* are summarized. Thus, for the purpose of reporting, the joint coding procedures are separated. The findings are presented in detail so that nothing is left to the imagination of the reader when judging (Diers, 1977).

8.1 Substantively coded activities in clinical settings

From the initial phase of the coding procedure, features of the educational process in clinical settings are reported as findings (Section 8.1.1 and 8.1.2). These substantive codes are properties of emerging tentative categories. They have been crystallized by analyzing and comparing the coded structural descriptions and short sentences in the field notes. How the immediate coding procedures were carried out has been demonstrated in Section 7.3. The substantive codes are put together in this section and summarized to make the reading easier. In Section 8.1.3 the substantive codes are further summarized and presented.

8.1.1 Findings in direct teaching/learning situations.



A direct teaching/learning situation.
Intervention/interplay
staff member/student.

The learning climate was usually very supportive. Oncology nurses (therapy radiographers) in the preceptor role enjoyed, with some exceptions, having students to teach and instruct. If they were manipulating the controls of a therapy machine they did it in a very skilled, experienced, and knowledgeable way, and gave the student detailed instructions on how to act in the same way they did themselves. Concrete levels and abstract levels were mixed in their instructions without an assessment of the level at which to start. Some students were delegated responsibility. Though many activities by nature were problem-oriented, the student's problem-identifying and problem-solving abilities were seldom challenged. Students received answers to questions they had never posed. Some attempts were observed regarding

challenges for creative thinking such as method development, sometimes initiated by the student's faculty-decided project. Some students worked very independently with projects. Differences were observed regarding the students' approaches to these learning situations. Educational background was a greater influence than age and experience. To search for rationales for activities was a more common phenomenon among students in the 4-year programs (USA) than among students in the 2-year programs (Sweden and USA). A recurring phenomenon in all the programs was that staff members avoided stimulating that kind of questioning.

"It is a pity never to be encouraged to think by yourself." (Student's account)

"I take my questions back to the school. There is no point in trying here." (Student's account)

Accuracy was the alpha and omega of radiation therapy departments and strict rules and routines guided the procedures. The students were instructed to measure, record, test, compare, recheck, and sign. Accuracy was the most frequent indicator during the study. Accuracy was part of the machine-centered instructions and was perceived to be equal to quality assurance in treatments.

"I just have to concentrate on how to handle the machine. That will be my job soon."
(Student's account)

In order to learn about different treatment modes, the students circulated through the department. After several weeks exposure at one "station" they moved to the next. This movement did not require that a protocol or a checklist of learning activities and achieved goals was used to inform the next staff member who took over the student. Students were instructed by different staff members - the one who happened to be at the "station" became the preceptor. This variety and incontinuity resulted in fragmentation of knowledge. The choice of preceptor was haphazard. As individuals, the preceptors were active or passive, interested or not interested, boring or stimulating, static or dynamic in the instructing role forced upon them.

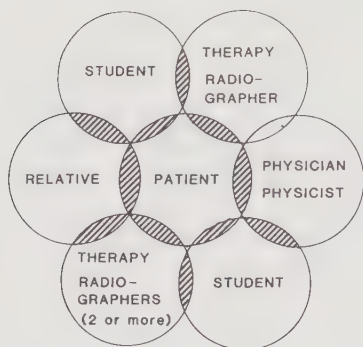
Students often talked about their adapting strategies. They remained close to the actual instructing staff member, they listened attentively and did as they were told, or acted as the staff member did. Skilled practice was transferred which emphasized concrete, useful, and directly applicable knowledge within the radiologic treatment domain. Caring for the patient was implicitly embedded, especially in the demands for accuracy. Handling the patients' reactions and emotional responses was almost never discussed.

"You cannot teach students how to cope with the patient's feelings. The only way to learn that is by experience. And for sure, you learn!" (Staff member's account)

The students took part in the collaborating team of physicists, physicians, oncology nurses (therapy radiographers) - a team, however on unequal terms. The nurses (therapy radiographers) did not have autonomous positions but acted as they were

told. They had considerable responsibility for different procedures connected to the delivery of radiation, but they acted rule-guided. The responsibility for patient care was not articulated. They were responsible for correctly carrying out decisions made by others - their responsibility was by nature controlled. The phenomenon was marked when compared to another health care delivery system such as in the USA, and revealed an unused potential.

8.1.2 Findings in indirect teaching/learning situations



An indirect teaching/learning situation.
Intervention and interplay
staff/student/patient

As was done in Section 8.1.1 for direct learning situations, a brief summary is constructed here describing activities coded as characterizing the indirect learning situations. The indirect learning situations were more frequent because they were ongoing throughout the day. They became crucial for two reasons.

First, they represented authentic situations where the interaction of student, staff, and patient could be observed during short encounters. *Second*, due to their frequency, the situations represented the main learning situations for the student.

The element of chance in the choice of preceptors was emphasized because the main determinant of learning situations was exposure to different kinds of equipment for diagnosis and treatment. What has been described in Section 8.1.1 has a bearing on the indirect learning situations also. Here, however, the self-confident student nurse was observed choosing strategies and judging alternative activities.

The heavy work-load contributed to the importance of prompt actions. Patients were usually met in the waiting area and escorted to the room for diagnosis and treatment. The interventions were characterized as very skilled, accurate, safe, and alert procedures that inspired the patients with confidence.

Accuracy, with few exceptions, guided observed performance and the activities were

usually carried out in accordance with the rules and routines developed for clinical safety. To offer the patient security in diagnostic or treatment situations played an important role and was the therapy radiographer's (oncology nurse) contribution to quality assurance for the patients and one precondition for treatment effect. Cross-checking the dose delivery was observed in some departments. Techniques for immobilization of patients were developed and/or utilized to different degrees by different staff members. As a result, the students were exposed to different degrees of accuracy. If accuracy was haphazard, the students never questioned the preceptor's performance. In that kind of situations students often received increased responsibility which they willingly accepted and to which they adopted.

One phenomenon, which struck an observer immediately, was the pattern of verbal and non-verbal communication in the interaction with patients. Addressing the patient was usually intertwined with other activities. Patients were politely informed about what was going to happen, often on request. The information was given in short sentences, whether it was the first visit to the department or one visit of several. The similarity of information given revealed that it was not based on an assessment of what the individual patient wanted to know or information requested by the patient, but as a routine and based on conditions supplied by the informer. Answers were given indiscriminately to questions not put into words. It could happen, for example, that a patient was informed about radiation when anxiety about managing the elevator to the ward was the patient's main concern at that point. Information was given without feed-back concerning comprehension, especially when patients had to sign the "informed consent".

"We do not have time to give the information we want..."

was frequently expressed and used as an excuse among staff members. The amount of information given was perceived to be equal to an informed patient whether or not the patient understood the information. The way the heavy work-load was organized influenced time restrictions - a problem solved in very different ways in different departments.

Many patients knew the personnel well, were accustomed to the procedures, and were familiar with the department. The interplay often was kindly but cursory. Staff members met with in average 30 patients every day, which influenced the opportunities for deeper involvement with patients as individuals. The conversation was superficial and indifferent. Students were exposed to staff members balancing engagement and efficiency in short encounters.

As for the patients, several investigations have shown that a diagnosis of cancer creates very powerful emotional responses such as anxiety, fear, depression, or complacency. Such feelings were expressed in a variety of ways, for example, scared, easy-going, uncertain, hesitating, and silent reactions. The way students were taught to observe and assess patient reactions was implicit. Whether a patient's contentment

in a situation was true or not was seldom discussed. The question was avoided.

Patients were very silent and seldom took the initiative in interplay, but most situations did not by nature invite interplay since patients were lying half-dressed on a bench and meeting with two staff members in a very short encounter. When patients showed signs of, or articulated, anxiety, fear, or depression, they were calmed with comforting words or by touch, expressions of empathy, human kindness, and concern. The activities were careful and supportive.

In their search for comfort, patients were selective. They related in different ways to different staff members. Often the students were approached. Perceived as "standing by", they were easy to disturb and as by-standers they were eager to capture the patient's message. If not standing by, the message was avoided because they were concentrating on handling the machine. However, getting involved in questions about life and death was confusing and though they were concerned for the patients, students tended to keep away from situations where they were exposed to something they could not handle. Coping mechanisms was not an issue included in the preparation of the student.

8.1.3 Substantive conceptual codes

Emergenced and clustered indicators below are examples of the Substantive Conceptual Codes (SCC) regarding the nature of interactional patterns of student activities, staff member activities, patient reactions, and situational and contextual influences.

Clustered indicators:

SCC indicating:

STUDENT ACTIVITIES:

Attentive - acting as told -
insecure - imitating -
uncertain - adapting -
attentive to machinery work

ADAPTING (DEPENDENTLY)

AIDING

Close to - attentive -
imitating - polite -
accurate - prompt

IDENTIFYING

Attentive - independent -
self-confident - adapting -
unchallenged - asking "WHY"
-accepting - choosing

RATIONALE-SEARCHING
CHALLENGE-SEARCHING
ADOPTING (INDEPENDENTLY)

Kindly - eager - concerned

CARING

Confused - keep away - cursory -
uncertain - unprepared

AVOIDING

STAFF MEMBER ACTIVITY IN THE PRECEPTOR ROLE

(teaching and working
aspects, with influence on the
educational situations):

Skilled - knowledgeable -
experienced - accurate -
responsibility-controlled -
rule-guided - polite - forced -
accepting

SKILLED CONCRETE
SITUATION-SPECIFIC
CONTROLLED

Accurate - controlled -
rule-guided - skilled

ACCURACY-RULED
CONTEXT-DEPENDENT

Supportive - enjoyed -
team-member - polite

SUPPORTING

Unchallenging - implicit -
avoiding

BLOCKING

Supportive - delegating respon-
sibility

SUPPORTING INDEPENDENCE

Knowledgeable - experienced -
mediating how to act here and
now - accurate - rule guided -
concrete - the same way -
not assessed

CONVEYING "HOW"
FRAGMENTING

Answers before questions

REVERSING SEQUENCES

Creative thinking unchallenged -
avoiding questions - problem-
solving implicit - caring impli-
citly embedded - time limitation -
high work-load

AVOIDING
IMPLICIT LEARNING

Variety of preceptors -
ruled by chance

EDUCATIONAL DISCONTINUITY

Quality assurance - importance
- offer security skilled -
accurate - safe - polite
inspire confidence

CONFIDENCE-BUILDING

Cursory - polite - superfi-
cial - indifferent - complacent
- ignoring - intertwined
activities

INATTENTIVE

Implicit - concerned - touching
calm - comforting - empathetic -
human kindness - cursory -
careful - supportive - polite

SENSITIVELY RESPONDING

Indifferent - avoiding -
careful - concerned

POLITE

Polite - inconsiderate - without
feed-back - time-restricted

BY ROUTINE INFORMING

Involvement - time-restricted -
accurate - nice - polite -
content - uninviting situation -
complacent

BALANCING

PATIENTS' EXPRESSIONS:

Safe - accuracy - confidence -
content - calmed - comforted -
familiar

TRUSTING

Kindly - polite - contentment
silent

CONTENT

Hesitating - uncertain -SEARCHING
crossing the border - lingering

Anxiety - fear - searching -
selective - not addressed -
attentive

TROUBLED
IDENTITY

Anxiety - fear - avoiding

WITHDRAWING

Unconcerned - easy-going -
uninformed - complacent

INDIFFERENT

SITUATIONAL CONTEXTUAL INFLUENCE

Supportive - team-based

STIMULATING (CLIMATE)
DIFFERENTIATING (STRUCTURE)

Accuracy - security

ACCURACY DEPENDENT

Useful - concrete - applicable -
skilled - accurate - quality
assured - prompt - alert

WORK RELEVANT

Arbitrary - forced - accepted -
ruled by chance

UNPREPARED

Authentic - concrete -
applicable

FACILITATING

Lack of time - high workload -
short encounter - organizational
frames

RESTRICTING

Waiting - hidden rules -
uninformed

RESTRICTING

Waiting - entertaining

DISTRACTING

Emotional response -
authentic - lack of time -
prompt - search - unprepared

CONTINGENCY

8.2 Theoretical coding and analytical abstractions

Theoretical coding and analytical abstraction denote further conceptual elaboration by relating the substantive codes, searching the links between them, and interpreting the meaning of interactional activities in light of the research questions and the presented conceptual framework. By constantly comparing, separating, and re-integrating core features, the categories finally emerge. It should be re-emphasized that theoretical coding is not the last stage in the research process, but part of the joint movements among data collection, analysis, and coding carried out throughout an investigation. The emerged categories are presented below. The figures in this section do not illustrate empirical results, but are used to illuminate what is derived analytically or concluded.

* THE "WING-CLIPPED" PERFORMANCE

Student approaches to learning situations coded as ADAPTING and IDENTIFYING, aroused interest in activities/performance as the target for their adaptation and identification. Staff members were by nature a central source for role modeling. The EDUCATIONAL DISCONTINUITY of having different staff members acting as preceptors and acting at different levels of proficiency was an impediment for identification with one person as role model or for one mode of performance.

A core feature in observed situations and collected data, which could be related to proficiency, was responsibility. Oncology nurses (therapy radiographers) had considerable responsibility for different technical procedures connected to radiation therapy, but also for patient care in the situations of diagnosis and treatment.

Autonomy, one of the hallmarks of professional performance, represents a dimension of responsibility. However, very few autonomous judgments related to interventions were requested. In the field notes responsibility had been preliminarily coded as being CONTROLLED. By nature, part of nursing work is delegated, for example, administering medical prescriptions, but nursing work also has its own territory. Staff members were mainly acting rule-guided or acting as the physician's or the physicist's extended arm. The borderline was neither articulated nor questioned by the oncology nurses (therapy radiographers). Controlled responsibility was accepted in a harmonic disorder as being the regular course of things. Autonomous judgments in relation to patient care problems were seldom mentioned in the field notes.

This DIFFERENTIATING WORK STRUCTURE was a more noticeable phenomenon at some departments when performance was compared to another health care delivery system such as the USA.

Responsibility thus was related to proficiency and is, for the analytical conclusions,

illustrated in Figure 8.1.

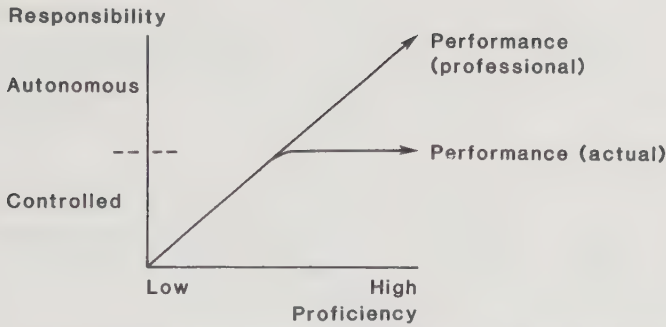


Figure 8.1 Performance as a function of responsibility and proficiency.

Conclusion:

Whatever the level of proficiency was, as long as responsibility was controlled as a consequence of contextual requirements or acceptance, the PERFORMANCE at a professional level - which was the target for students' identification - was WING-CLIPPED.

* THE NIL-CURRICULUM

The students' IDENTIFICATION with the staff members' performed activities was observed to be high. Thus, performance, as discussed in the previous category, now was related to identification. The relationship on which the theoretical conclusion is based is illustrated in Figure 8.2.

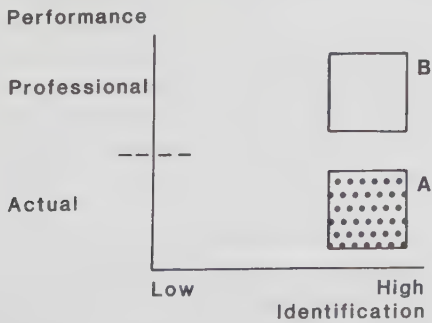


Figure 8.2 Identification related to performance.

The dotted field A in the figure is the consequence of CONTROLLED responsibility, which hampered the occurrence of professional performance (as outlined in Figure 8.1). Students were to a certain degree exposed to the preceptor's judgments, but the majority of activities were rule-guided or delegated and did not require accountability. Consequently the incentive to reason and make judgments regarding health care related problems was diminished and these abilities were not stressed as important in the educational situations. Thus B became an empty square.

Due to less controlled responsibility, a difference in performance was observed in some American radiation therapy departments. That was, however, no guarantee that the empty square B did not exist. Conveying the ability to make judgments and decisions based on reasoning demands very special skills which were seldom demonstrated. Exposed to, but not trained, means that students need an amount of sensitivity to discover the phenomenon.

Conclusion:

Autonomous responsibility is a core feature of professional performance. This kind of proficiency (e.g., decision making), was usually not required for work performance and thus not conveyed in observed teaching-learning situations. If required, there was no guarantee that the issue would be included in educational situations. Field (B) in the figure above thus became an empty field representing content which was not part of teaching-learning situations - not by ignorance but due to content not required for performance. A NIL-CURRICULUM (cf. Eisner, 1979) was conveyed in the clinical settings.

* THE UTILITY VALUE

ACCURACY was a frequently recurring phenomenon. Accuracy ruled staff performance and saturated all learning situations. Through accuracy oncology nurses (therapy radiographers) assured quality in patient care interventions. It was one of their contributions to BUILDING UP CONFIDENCE between care-giver and recipient.

As for different health care delivery systems, no differences existed in emphasizing the importance of accuracy. Differences were only observed on an individual basis. Thus students were seldom exposed to variety in accuracy.

As IDENTIFICATION was high, students demonstrated accuracy at a high level. Accuracy as a learning outcome is illustrated in Figure 8.3 (S), where accuracy ruled staff member activity is related to identification. In the ACCURACY DEPENDENT context, students identified accuracy as a WORK RELEVANT activity - a useful, CONCRETE knowledge, which received value because it was a guiding principle for

SKILLED staff members. It is a well known fact that specific and immediately applicable knowledge has high priority among students and FACILITATES learning.

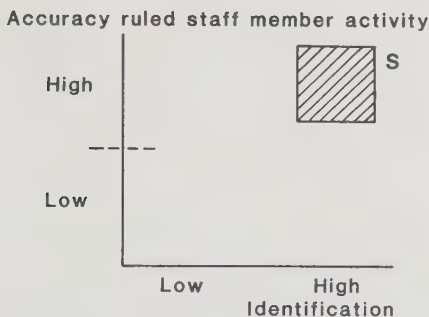


Figure 8.3 Accuracy as a learning outcome.
(S) Accuracy-ruled student activity.

Conclusion :

Knowledge of utmost importance for quality assurance in patient care was easily conveyed in educational situations in clinical settings, since interventions, which derived VALUE FROM UTILITY, were identified as work relevant. Students learned that the attained skill of accuracy was required and used.

* THE STUDENT - ADAPTING, ADOPTING, SEARCHING

Differences in students' approaches to educational situations were observed and coded. Some students were SEARCHING FOR RATIONALES when they were confronted with new stimulating facts. They also wanted to have opportunities to be CHALLENGED and to test their own ability in clinical settings. Others ADAPTED passively to the way things were or to an AIDING role, others were quite occupied with learning the rules and orders for how to perform and ADOPTED without questioning that to which they were exposed. The differences in students' approaches were mainly due to length in educational preparation. Students in four-year programs (USA) asked questions about rationales for actions and wanted to be more educationally challenged than students observed in two year programs (Sweden and USA).

Staff members in the preceptor role CONVEYED "HOW" to act and their AVOIDANCE of problem-solving and problem-identifying endeavors was a rule with few exceptions in the teaching-learning situations in both countries. The preceptors were

forced to act in a role for which they were not trained and met frequently with new students. The average student and staff-member approach is compared in relation to length of educational preparation in Figure 8.4 to illustrate what is concluded.

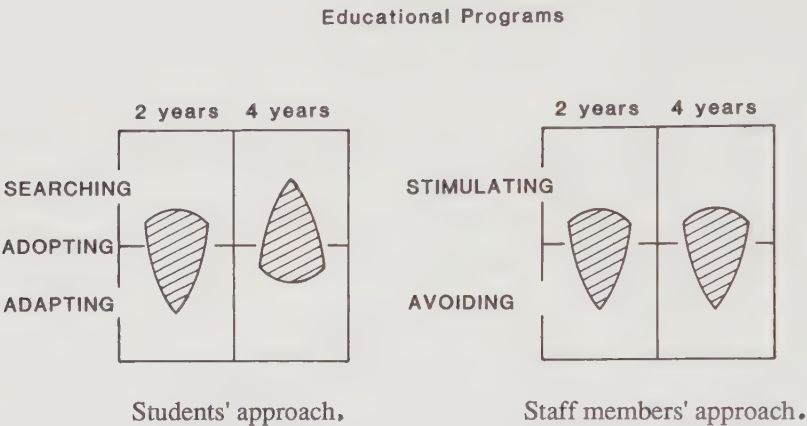


Figure 8.4 Different approaches to educational challenge in two- and four-year educational programs.

Conclusion:

Staff members' approach to educational challenges, coded as avoiding, corresponded to students' approach in the two-year educational programs coded as adapting and adopting. Time available in the two-year educational programs limited the opportunities for the students, as well as for the staff members acting in the preceptor role, to move any further than to learn and to teach "how to act" in an apprenticeship system. That condition constituted a guarantee for preserving the current system and was stressed by the fact that the searching student approach was met with an avoiding (as to educational challenges) staff-member approach. Avoidance was a consequence of lack of time available, but also of educational discontinuity related to frequent shifts of preceptors.

* THE CAPRICIOUS ENDEAVOR

When being socialized into the professional role, student nurses met with staff members acting as preceptors mainly in indirect learning situations where patients

were involved. That gave the situation a touch of reality. The students were exposed to the context-dependent CONTINGENCY characterizing clinical settings.

For educational purposes teaching-learning activities took place in a STIMULATING CLIMATE, but the situations were UNPREPARED in not having a base in educational theories concerning development and formation. The content was seldom planned or organized to stimulate and facilitate movement in stages within the individual student. The student's readiness was seldom assessed. A core feature was the REVERSED SEQUENCES of questions and answers.

Since different staff members not educated for their mission acted in the role of preceptors, the educational activities were ruled by chance. A wide range of commitments was observed, which had an influence in SUPPORTING or BLOCKING the students' growth toward skilled practitioners. The frequency with which students met with different preceptors indicated EDUCATIONAL DISCONTINUITY, and they were exposed to a highly contingent variety of profiles in interaction (Figure 8.5).

		INTERPLAY	
		High	Low
INTERVENTION	High	Skilled empathic	Skilled unengaged
	Low	Haphazard empathic	Haphazard unengaged

Figure 8.5 Patterns of interactions .

Some students mobilized strategies beneficial for ADOPTING to the differences. Other students ADAPTED more dependently to the skilled/haphazard and empathic/unengaged practices demonstrated.

As a consequence of educational discontinuity, the students were exposed to a cascade of FRAGMENTED, SITUATION-SPECIFIC activities with information determined by different approaches in intervention and interplay. Because of exposure to this contingent variety, students were more occupied with developing strategies for coping with contingency than with developing strategies for being reflective as to the richness embedded in the variety.

In the observed cases where educational continuity was under control, students' learning needs, readiness and perceptual understanding were constantly assessed and provided the basis for educational endeavors where INDEPENDENCE was SUPPORTED.

Conclusion:

Teaching-learning situations in clinical settings denoted educational discontinuity and thus a fragmented, contingent transmission of skilled nursing practice. A core feature was the reversed sequence of questions and answers. Educational situations in clinical settings were CAPRICIOUS ENDEAVORS. Anything, good or bad, could be the learning outcome.

* THE CURSORY INTERPLAY

Several patterns of interplay were observed. Staff members expressed their dissatisfaction with present conditions, deploring their insufficiency "... but we do not have time!" Interplay with patients was always measured in quantity of time. Quality was perceived as proportional to quantity.

Since students were fully occupied with learning the technical procedures, they were never expected to demonstrate a specific ability for interpersonal procedures. How to interplay was also IMPLICITLY conveyed. By nature most patient ENCOUNTERS were SHORT and with a heavy work-load the TIME was RESTRICTED and called for prompt action.

That the patients' CONTENTedness could be a response to SENSITIVE and POLITE cursory interplay integrated with CONFIDENCE BUILT UP in prompt actions was a matter of divergent opinion among staff members. Some assessed the quality of interplay in terms of being verbal and temporal, and some were BALANCING the desire to give "holistic care" with the demand to increase the work load.

The demonstrated ambivalence became very salient when compared to staff members' opinions in the USA. They were unanimously convinced that the cursory interplay contained the qualities required for good patient care, and it was the pride of a skilled practitioner to see to it.

Conclusion:

Health care personnel were underestimating their contribution to building up confidence in time-restricted prompt actions. It is illustrated (Figure 8.6) that the interplay in short/episodic encounters has a dimension of quality (A) which is weakly articulated but not identical with the dimension of quality (B) for interplay in continuing encounters in patient care.

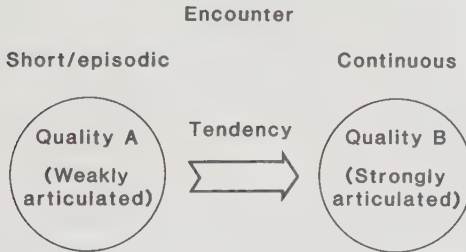


Figure 8.6 The interplay in encounters.

Quality B is strongly articulated, especially within the college-based part of nursing education and today also in the society it represents an unbalanced focus on interplay. Quality A represents a tacit knowledge, linked to short patient encounters, usually not articulated in educational situations. A tendency to focus on other qualities for interplay, not attainable due to organizational restrictions, was noticeable.

If the quality (A) of the CURSORY INTERPLAY in short/episodic encounters became articulated and perceived as the pride of a skilled practitioner, it would become work relevant and conveyed to the students.

* THE EMOTIVE STRENGTH IN CURSORY INTERPLAY

The patterns of staff members' and patients' engagement in interpersonal procedures varied from highly involved to INDIFFERENT. Students were exposed to a variety of modes, but staff members' activities usually did not directly influence the students' activities in the same way interactions for technical procedures did. The students separated the HOW to intervene from the HOW to interplay and were CARING for the patients in their own way.

Exposure to the variety of modes had an impact on what thoughts were evoked within students and are thus related and illustrated in Figure 8.7. The figure represents a

model for analytical purposes and does not present empirical results. In the figure, the concept of engagement (scaled from closeness to distance) is very roughly divided into Maximum, Medium, and Minimum, and the three levels are not defined. To do so is an ad hoc decision for the purpose of clustering the analytical abstractions of the empirical coded data.

		Patient engagement		
		Max	Med	Min
Staff member engagement	Max	A	B	C
	Med	D SEARCHING patient	E SENSITIVE, POLITE interplay and the CONTENTLY TRUSTING patient	F
	Min	G INATTENTIVENESS TROUBLED, WITHDRAWING patient	H	I Mutual INDIFFERENCE

Figure 8.7 Different patterns of engagement in interplay.

Substantive codes listed below show that D, E, G, and I represent recurring patterns. A, F, and H were infrequently observed patterns, and B and C represent a kind of professional anomaly which was never observed.

- A A "text-book case" - infrequent pattern
- B and C. Not observed
- D The SEARCHING patient
- E The SENSITIVE, POLITE interplay and the CONTENTEDLY TRUSTING patient
- F Infrequent pattern
- G INATTENTIVENESS to TROUBLED, WITHDRAWING patient
- H Infrequent pattern
- I The state of mutual INDIFFERENCE

What students were exposed to and experienced:

Field E:

The SENSITIVE, POLITE interplay and the CONTENTEDLY TRUSTING PATIENT (Staff=Med., Pt.=Med.)

Field E represents a very common pattern in the observed situations. Not every patient was highly engaged or wanted to be engaged. They were at ease and trusted the staff members to do the best for them, which they did in a skilled manner

Field D:

The SEARCHING patient (Staff=Med., Pt.=Max.)

The searching patient highlighted for the students the need for increased sensitivity. Dealing with questions of life and death became a dilemma which they AVOIDED because they were uncertain how to act in short encounters

Field I:

The state of mutual INDIFFERENCE (Staff=Min., Pt.=Min.)

Field I was another confusing situation for the students to experience. Field A represented the situation they were expecting and looking for, the way they were told it "ought to be" in clinical settings. Unable to identify whether indifference as a patient reaction was a matter of escape or not, they tended to AVOID involvement, became indifferent, and escaped.

Field G:

INATTENTIVENESS to TROUBLED, WITHDRAWING patient (Staff=Min., Pt.=Max.)

This field describes a pattern of interplay which is said to be significant for the health care delivery system. The imbalance is described in terms of personnel not being attentive to the engaged patients' needs and demands and not meeting the patients' needs with empathy. This results in TROUBLED "PATIENT-SHIP".

Conclusion:

To recognize the different patterns of patient engagement in his/her situation takes the skills of a master. To sharpen the student's sensitivity for assessing patient reactions is to train pattern recognition, that is, whether or not the patients are accustomed to engaging in things they do not fully understand, are accustomed to sharing feelings, have lived through trials before and want to do it on THEIR OWN CONDITIONS, etc. Skilled pattern recognition implies that ETHICAL DILEMMAS are solved and gives the cursory interplay an EMOTIONAL STRENGTH.

* THE WISH TO KNOW - THE COURAGE TO ASK

"The informed patient" is today an important concept, and staff members wanted to and were eager to inform the patients. The informed patient knows about treatment procedures and is given opportunities to express and share feelings and to ask questions of concern for him/her.

It should be noted that patients in radiation therapy departments could be either in-patients coming from a ward in the hospital where information also is given, or out-patients who come to the hospital for treatment.

The variety of what patients want to know is as varied as is the number of ideas about what patients ought to know. In dealing with the issue, the uniqueness of the individual is a stumbling block for most communication efforts. A common way to solve the problem is to trust a basic form of intuition mixed with experience, develop "the average patient" for whom information is worked out, and deliver that information to all patients. The phenomenon has bearing for DISTRACTING patients in the waiting area, too.

The observed situations were no exception. Information concerning interventions in treatment procedures was given in a POLITE way, but INATTENTIVELY as to what the patients wanted to know. Assessment of the patients' readiness to receive information was unusual.

In the short encounters, patients were INFORMED BY ROUTINE on issues that were CONCRETE for the oncology nurse (therapy radiographer) but were abstract for the patient. Since patients met several members of the staff, communication was RESTRICTED because the individual staff members were uncertain "what" and "how much" the patient already knew. What and if patients want to know was seldom assessed, but the cursory interplay was not only one interplay, it could average 30 every day. "Someone else" was usually responsible to see that the patient received the information that the patient wanted.

As mentioned under the heading "The emotive strength in interplay", the students were confused and trapped in an ethical dilemma when patients turned to them with unanswered questions. How to cope with such situations was not included in their instructions. Since "...you cannot teach students how to interact with patients" (account), the issue was AVOIDED. Students were not expected to handle those kinds of situations even though they frequently ended up in them. The more insight feeling students had, the more they CARED for the searching or TROUBLED patients, the more those patients were finding them with questions on life or death.

Conclusion:

To assess the patients' WISH TO KNOW interrelated with the patients' COURAGE TO ASK (Figure 8.8) demands diagnostic reasoning skills and clinical judgment skills as to what is requested in the situation. These skills are hard to convey in learning situations in clinical settings characterized by short encounters.

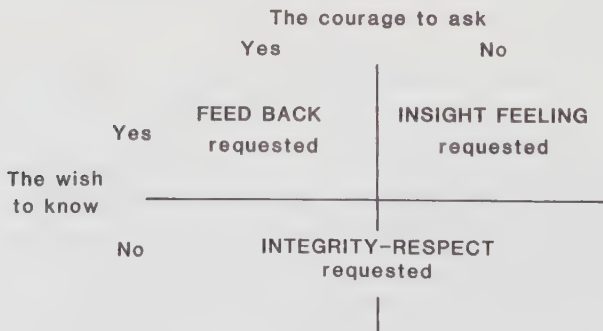


Figure 8.8 Abilities required for clinical judgments.

8.3 The categories in summary

Below is summarized what was abstracted analytically during the coding procedure of educational processes and clustered as categories characterizing educational situations in clinical settings where patients with a serious disease are treated during short encounters.

In order to avoid any possible misunderstanding, it is important to stress that the findings are not evaluating the clinical practice, but are pin-pointing some recurrent phenomena. The point of view has been the research questions which in the beginning guided the observations of educational situations in the field. Empirically grounded indicators then directed the research process toward an identification of core features regarding educational processes in clinical settings.

The categories are generated from the perspective of a broad conceptual framework regarding the development and formation of professional nursing practice, which is the aim for pedagogical practice when student nurses moving from principles to practice in one kind of clinical setting. With that perspective, the interpreted nature and meaning of educational processes in terms of conditions and consequences could be presented by merging the empirically grounded categories as below:

In the study it was found that although educational processes occurred in a supporting climate which contributed to stimulate growth and development, the processes were CAPRICIOUS ENDEAVORS toward stimulating individual development in a prepared environment. Educational discontinuity, a core concept, contributed to that. THE STUDENTS - ADAPTING, ADOPTING, SEARCHING, - were exposed to, experienced, and identified concrete, skilled nursing activities of VALUE due to UTILITY. Activities with relevance for immediate work performance were stressed and easily mediated in the teaching/learning situations. Accuracy is one example of a core feature permeating educational processes. Students' identification with their role models was high.

Challenging dialogs were avoided since answers were given without questions being posed - reversed sequences characterized the educational process. Readiness for learning was seldom assessed. The training of diagnostic reasoning abilities to aid autonomous decision-making regarding health care related issues was avoided, not by ignorance, but by not being a prerequisite for work PERFORMANCE. Activities became WING-CLIPPED and a professional performance thus was impeded. As a consequence, a NIL-CURRICULUM was transmitted in the clinical settings.

Regarding interplay, caring for the cancer patient in short encounters exposed the students to a variety of patterns of engagement and to the EMOTIVE STRENGTH IN CURSORY INTERPLAY. A sensitive and/or polite way to interact with the content and trusting patient was common. The core feature of broken sequential order in interplay (addressing, informing etc.) seemed to be of less importance. Students committed to

caring for troubled patients could be caught in ethical dilemmas related to what the patients WISHED TO KNOW and had THE COURAGE TO ASK - situations for which the students were unprepared.

The specific qualities in a CURSORY INTERPLAY were underestimated by staff members, who felt inadequate to keep up with their caring ambitions in the short encounters. A deficit was discovered and, in spite of excellent performance, saturated the educational processes.

The generated categories point toward different EDUCATIONAL TRAPS students encounter when moving from principles to practice in clinical settings.

9 DISCUSSION OF THE METHODOLOGICAL APPROACH

Scientific knowledge has its origin in the apprehension of reality and has evolved from approved experiences and values. It is from that basis that researchers pose questions and systematically are searching for answers that will unveil yet unknown structures and sequences, and constitute a new knowledge which is an approximation of reality. The choice of research method is dependent on the research question. It depends on whether the purpose is to prove relations between isolated variables or to interpret relations between integrated variables.

In an observational study utilizing a qualitative method for collecting and analyzing process data, the investigator's mind is similar to the computer used in a radiological examination: The computer first translates the received image and then subtracts (by contrasting) the reference images in order to enhance the structure of interest.

To capture the essence of ongoing occurrences demands, as earlier mentioned, a multi-dimensional perspective. Core recognition in process analysis is a question of getting a mental image of the "vector" when the different perspectives are merged (cf. Section 3.2, Figure 3.8). The structure of interest is enhanced by contrasting, and the changes over time are followed up. Stern (1980), using the grounded theory approach in her study, stated that continuous comparative analysis is a matrix operation rather than a linear endeavor.

The value and usefulness of choosing a naturalistic approach for this study has been outlined in Chapter 4. The method used will be discussed in this chapter, as it was decided not only to use the method of constant comparative analysis, but also to assess the utility value and to enhance overall knowledge regarding this specific approach.

9.1 From empirical data to reported analytical abstractions

In concluding, two important questions arise. First, did the method used provide means by which the researcher was able to present findings that meet the criteria for qualitative validity and reliability (cf. Leininger, 1985)? Second, what were the pros and cons of choosing the method of constant comparative analysis for generation of grounded theory in this study? The first question will be answered immediately. The second question will be answered in the next sections by discussing the vital points and joint movements in the approach with regard to analyzing educational processes in clinical settings.

As to *qualitative validity* and *reliability*, the grounded theory approach provided means by which the generated categories meet the criteria proposed by Leininger (1985) and outlined in section 4.2.1. The research instrument registered what it was supposed to register by "...gaining knowledge and understanding of the true nature, essence, meanings, and characteristics..." of educational processes in clinical settings (qualitative validity) and gauged consistency by "...identifying recurrent, accurate, and consistent or inconsistent features ..." of educational processes in clinical settings "...confirmed in similar or different contexts" (qualitative reliability).

9.1.1 The sampling technique.

For an exploratory or factor-searching investigation, the value of a purposive sampling technique is obvious. Access to maximum exposure of different aspects of the phenomena studied is the strength as well as the weakness of the technique. The *strength* is that it allows the research question, the purpose of the study, and the emerged concepts to guide the research process through unexpected situations toward relevant comparisons and toward core recognition. The *weakness*, is that the amount and richness of data collected could, if not limited, threaten the clarity of vision and confuse the purpose.

The experiences of using a purposive or theoretical sampling technique in this study were of both kinds. During the first week in the field a temptation was noticed to sample events for the purpose of confirming prejudices in a subjective way. However, that temptation ceased rapidly and never became a problem due to the simultaneously ongoing analysis. With respect to that, the technique was self-adjusting because the emerging categories guided further selection of samples. Whether or not that has been fulfilled in an objective way is for the reader to judge.

What became more threatening was trying to balance the *challenging richness* of data with the feeling of confusion and inability to keep pace with the changing richness of the data. An observational study in a field characterized by contingency in context as well as in human interactions produced an inflow of valuable data for sampling every minute. To keep up with that richness was like trying to catch every falling snowflake. Glaser & Strauss describe the richness of data overwhelming the researcher as "a drugless trip". The question was not so often "Am I biased?" as "How shall I be able to cover the richness of data?"

To consider incidents as they appeared in the contingent clinical setting was a contribution and an opportunity to come very close to what seemed to be a clue to what really mattered. It was also an opportunity to follow the trail of un-anticipated incidents, an activity which a pre-structured approach would never allow. Thus, the dimension of qualities in "cursory interplay", the dimension of "emotive strength" in interplay, the different patterns of "avoidance", the "discontinuity", and the "broken sequential orders" would not have been easily arrived at if the categories had been decided in advance. What *made a difference* would not have been unveiled, and

understanding thus would have been blocked.

The sampling technique is, however, enormously *time-consuming*. When Fagerhaug & Strauss (1977) accomplished their study on "Pain management", data were collected for two years by five researchers. Degner & Beaton (1981) spent six years in the field collecting data to generate a descriptive theory on "Life-death decision making in health care." That kind of information increased the feeling of uncertainty and diluted the researcher's experience of having reached "saturation" after five months in the field. Concepts have to be grounded in reality, but since it could take a very long time for some concepts to be saturated, the research approach becomes questionable. It should be added that *saturation* does not imply *density*. Even when a concept is saturated, time is still needed to increase its density. Few research projects are carried out without time restrictions. Thus, the risk of making premature closure is obvious.

9.1.2 The role of the observer

The role of observer is combined with some general problems. Most of them are described in every study using participant observation for data collection. From my point of view the following problems can be reported.

Sometimes I noted disappointment among staff members after a few days due to the fact that I was not *reporting "findings"* nor did I have any suggestions for the future to share with them. I had to take "...special pains to prove that I was not" (Schatzman & Strauss, 1973). It was hard to balance their demand for feedback and desire to get information on "results" with the openness and confidence I met.

Visiting different departments and dealing with many people demanded a great amount of *flexibility*. I was alternately perceived as an expert vs. a novice, a well known person vs. a stranger, accepted vs. suspect, or "...as a hopeless fool or dull stranger" (Kirk & Miller, 1986).

Sometimes it was hard to observe and maintain a *non-interfering* role when observed interactions with patients were not in accordance with my own judgment of what the situation demanded.

It was very hard to cope with the very specific *dynamic pattern* of interaction with staff members characterizing the first days in a new department. The established good relations and full acceptance from the first day turned on the third or fourth day into suspiciousness and total ignorance (cf. Berglund, 1985). Speculations were in the air like "...what is she *really* doing?" - notably, never a reaction among the students. Though the staff members' ignorance about my reason for being present was good for the investigation, it was bad for the investigator. However, after one or two days of frozen climate everything always turned back to full acceptance and the good relations were maintained.

The problems I found *most crucial* and a threat to validity were temptations to extrapolate, to make premature closures, or to make conclusions before observations, especially in boring situations.

9.1.3 Making comparisons

Comparison is basic to science, thus what is compared is crucial. In an experimental research design, randomized groups are compared before and after manipulation with defined dependent or independent variables. In this research strategy, comparisons are used to search and identify the dependent and independent variables in context. Constantly comparing incidents in ongoing occurrences has the potential to pinpoint core features in events. Inferences can be drawn by comparing conditions and consequences of activities in different or similar situations.

Group comparisons are important for maximizing differences and similarities. When, for example, the concept "awareness" emerged in the study on death and dying (Glaser & Strauss, 1965), the researchers turned from the terminal care wards to the delivery rooms in the hospital to compare awareness when dying with awareness in a birthing situation.

The comparisons accomplished in this study were all based on observing activities in similar groups: The triad of student, staff member, and patient. The differences found in situations comparing Swedish and American triads were used for contrasting and thus for enhancing awareness and sensitivity in observing activities. Thus, the differences in this study are not maximized, a process which would have been beneficial for showing variety. The reported codes and categories are *saturated*, but not all of them are *dense* enough for theory building.

In this study observing other groups would have been most beneficial for increasing the density and for saturating still unsaturated and therefore not utilized codes. It would have been helpful if, for example,

- developing professional identity,
- diagnostic reasoning in contextual contingency,
- cursory interplay in short encounters,

could have been investigated in other groups outside the health care delivery system or in groups where high technology and/or high time pressure are of minor importance.

9.1.4 Analysis and conceptual coding

The research strategy used to analyze and code the representational meaning of observed activities is close to the etic approach, presented in Section 4.2.1. The researcher's point of view and conceptual framework is used as the basis for interpretation and analysis.

If an analysis aims to capture the meaning in teaching-learning situations, even the intentional meaning, it may seem simple since the purpose for the situations is obvious. Questions regarding the meaning could easily be posed directly to those involved and research thus could be judged as forcing open doors.

The meaning in terms of the interactional outcome has, however, another dimension which the researcher must interpret. The findings in this study showed for example that the very strong role that "reversed sequences" and "identification" played in giving the teaching/learning situations a contour could upset any intention or plan for the situation. This was a phenomenon of which most staff members were unaware.

An etic analytic approach highlights the question of *objectivity*. According to Polanyi, every act of knowing includes a personal coefficient which shapes all factual knowledge, bridges in doing so the disjunction between subjectivity and objectivity. Among others, Lindholm (1985) discusses the claim for value exclusion in science. He states:

"It is my opinion that if we deny the influence of values we make invisible something which in fact exists, and by that we become victims of prevailing values which are so obvious that we do not perceive them as values but as the obvious order of phenomena." (Lindholm, 1985, p. 30 <my translation>)

Glaser & Strauss warn the researcher very strongly against the temptation to make logical instead of conceptual elaborations and thus point to an issue of importance in assessing the utility value of their research approach. As data collection, substantive coding, and theoretical coding are simultaneously ongoing processes, the researcher is working at different levels of perception all of the time. This is a challenge for the researcher to cope with and balance. But it presumably means, that at one point or another, the researcher stops acting like a computer. Still being theoretically sensitive and guided by emerging concepts, the researcher has to judge differences and similarities to be differences and similarities. In doing so, logical reasoning based on intentional consciousness, i.e., reference to value, sense, and meaning supported by past experiences and literature review, is utilized. Thus concepts do emerge due to a complementary use of logical elaboration. The personal coefficient included should be acknowledged, accepted, and credited not only as a provider of experiential data. It is, however, important to stress that a personal coefficient does not imply subjectivity if defined as opinions without restraints.

This point of view is supported by Bolton (1977) in a discussion of concept formation. Bolton perceived of concept formation as not merely recognition and abstraction of resemblances among stimuli. Recognition depends on point of view, and point of view is determined by a principle for organizing experiences. Bolton argues that concept formation is an act by which the *particular* is regarded as an *example of a type* and that the intentional consciousness makes the example expected. "Intention forms attention" (Bolton, 1977, p. 20).

Many research projects using the constant comparative analysis for generation of grounded theory have used a modified form of the method, and seem to modify their approach when it comes to making analytical abstractions by theoretical coding. The instant confrontation with the personal coefficient may be a shock rather than a challenge, and force the researcher to change approach by stating: "...a modification of the grounded theory...", "...a deviation...", "...drawing on Glaser & Strauss...", etc. Strauss points to the problem by listing the phases a researcher using the grounded theory approach has to go through in carrying a research project to completion. The phases are: To grasp the perspective of grounded theory analysis, to understand it, and to use the techniques. Most researchers grasp and understand. To master the technique and to use it is, however, a *slowly developing* and *hard won* ability (Strauss, forthcoming).

It is also common that the idea of emerging codes guiding further data collection is misunderstood. Some researchers have tried to start the coding procedure after they have finished their data collection. They are not only close to "drowning", but also far away from the main idea regarding the coding procedure, which is that codes emerge by the constant comparison of indicator to indicator. It takes special courage to be guided by coded incidents.

A deviation has in this study been reported (Section 7.4), but the deviation from the canons was a sidelong glance and the researcher's attempt to try the strength of a side branch.

9.1.5 Reporting the findings

For a reader to judge the *scientific value* of reported findings and the quality of how a researcher has worked *methodologically* demands a clarity in reporting, which allows the reader to follow every trace and every step taken by the researcher. That became another stumbling block.

The process of simultaneous ongoing data collection, analysis, and coding of compared events has one main purpose, and that is to peel off what is covering the core structure and procedural sequences. The reference images have value only in contrasting the structure of interest. Some codes are used only to facilitate the emergence of another code. Some codes are never used, some do emerge hours after the analysis, and some are "mentally" coded. The borderline between substantive coding and analytical abstraction is not a simple visible line. To explicate the steps in that kind of research process, and to summarize how the process progressed is to balance on the razor's edge. In spite of all handbook recommendations, the researcher is stuck in a loop when the coding procedures have to be written down.

When evaluating the research approach, this issue is important to stress as a peril to validity to which the researcher is exposed.

9.2 The pros and cons in summary

Assessing the research approach is in this study to state something about the strength and weakness of investigating educational situations by asking questions about the nature of phenomena to be known and understood. The assessment is not the result of comparing findings obtained using different methods, but an assessment of the value of the approach for analyzing educational processes in clinical settings. Carrying out the research process was fraught with difficulties for the researcher while trying to shift from a cause-effect perspective to a condition-consequences perspective.

Glaser & Strauss have, not unjustly, been criticized for failing to explicate their method adequately so as to guide the researcher (Conrad, 1982). In the section "Revisiting grounded theory", Melia (1981) states that the descriptions of procedures at times were more confusing than clarifying.

This "down to earth approach" has, however, fulfilled all expectations of *coming close* to the nature of activities characterizing educational situations in observed clinical settings, of *identifying* differences and similarities influenced by contextual factors, and of *unveiling* what really mattered in how teaching-learning situations became structured. The *empirically grounded* analysis and the *richness* of data to be analyzed contributed to that.

It should, however, also be stated that in this study the researcher sometimes was stuck in a loop relative to the following features. This restricts the utility of the strategy, especially for a beginner who is slowly developing the hard won ability of using this research approach.

- (1) The exceedingly laborious and *time-consuming* data collection to reach *saturation* and *density* almost jeopardized the study.
- (2) The demands on the researcher to work simultaneous at different levels of concrete descriptions and analytical abstractions in coding and analyzing process sequences was a *threat to the clarity of vision*.
- (3) The distinction between logical and conceptual *elaboration* in reporting the research findings produced reminders of Sisyphe in Greek mythology.'

10.1 From principles to practice in higher health care education

The empirical findings reported in Chapter 8 include eight categories generated by analyzing educational processes in observed teaching-learning situations. The categories are the analytical abstractions of what has been interpreted to represent pattern and order in activities carried out when role development takes place in one kind of clinical setting where cancer are cared for during short encounters.

The categories will be discussed from two different points of view. In Section 10.1.2 some categories are discussed in relation to a *theoretical model* of competence development for professional nursing practice. That model is described in Section 10.1.1. In Section 10.1.3 some of the categories are discussed as properties of what was conceptualized as *educational traps*, something students frequently encountered in clinical settings.

10.1.1 A model of competence development and formation for professional nursing practice

From a nursing perspective, the ability to identify and solve health care related problems by the use of diagnostic reasoning (clinical judgments and decisions) have been stressed as prerequisites for professional nursing practice (cf. Lysaught, 1970; Carnevali, 1984, discussed in Section 1.2.2). The competence is easily recognized in the stated goals in the new curriculum for nursing education (cf. Chapter 1).

In Chapter 3 a basic model was presented where competence was defined as an ability attained through development and formation within the cognitive and affective areas. As the research process progressed, existing knowledge was explored and the model became elaborated to finally reflect what has been concluded and what will be discussed.

A consequence for pedagogical practice is to put the different intellectual and emotional change processes into focus. Competence development and formation for professional nursing practice could be viewed as changes in two main components:

- * *The conceptual thoughtful component* - emphasizing the attainment of an ability for conceptual, logical reasoning.
- * *The emotive human component* - emphasizing a caring "ethos" and the attainment of an ability for empathic, "moral" reasoning.

Coexisting and related to each other - "complementary but inseparable" (Piaget & Inhelder, 1969) - change in ability for *logical reasoning* and for *moral reasoning* implies changes in ability for *diagnostic reasoning*, i.e., the ability to make value-based clinical judgments and decisions regarding patient care related problems. In the theoretical model shown (Figure 10.1), development and formation are perceived as the forces for change.

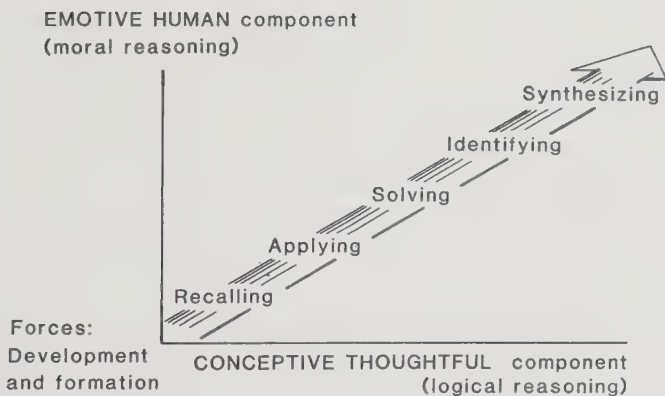


Figure 10.1 Changes in competence and performance as a function of changes in the emotive human component (moral reasoning) and in the conceptual thoughtful component (logical reasoning).

Diagnostic reasoning ability will increase in relation to development and formation of abilities for logical reasoning and moral reasoning. The stages of change are not conceptualized in the model, but the different classification systems and taxonomies presented in Chapter 3 exemplified direction for stage movements. In Figure 10.1 the taxons at different levels of diagnostic reasoning ability are characterized by activities in changes from:

- Simple to complex.
- Situation specific problem-solving to problem identifying.
- Rule dependency to accountability in judging alternatives.
- Atomistic recall to "holistic grasp" or synthesizing.

The identification of criteria at different levels, applicable in higher health care education, would facilitate efforts to provide experiences conducive to knowledge advancement.

The function is illustrated as linear, illuminating, but by no means a realistic illustration. When the basic model was presented in Chapter 3, it was stressed that development, even if graphically displayed as linear, should not be perceived as linear. That statement should be reemphasized in regard to the model in Figure 10.1. The model is a play of the mind for algebraic- or figure-minded readers.

In the words of Ashby in Argyris & Schön (1982), changes is better described as a combination of *single-looping* and *double-looping* (cf. Chapter 3), i.e., designing actions in accordance with existing governing rules (single-looping) vs. designing actions by breaking down and reintegrating the governing rules (double-looping). Thus another model could be drawn as below (Figure 10.2).

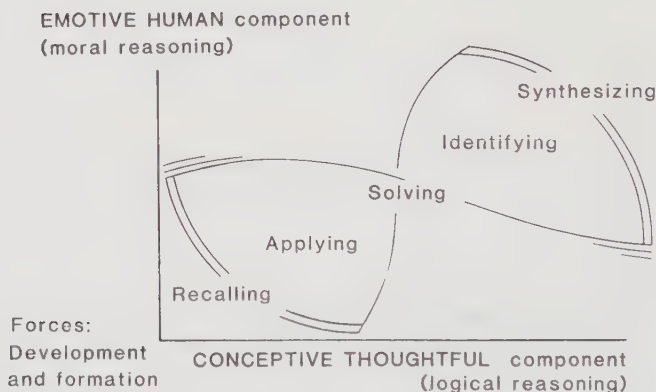


Figure 10.2 Changes in competence and performance as a function of changes in the emotive human component (moral reasoning) and in the conceptive thoughtful component (logical reasoning).

To distinguish between levels of competence/performance, the well-known terms journeyman, foreman, and master are useful concepts since practical knowledge within health care education is usually mediated through the system of apprenticeship. By using these terms, a true picture is given of what constitutes learning situations in clinical settings. Change and development toward mastery - a commitment to act at a certain level of excellence - also implies change toward *professional identity*. In health care the "master" and the "foreman" both are skilled practitioners in the way they interact with the patient. What makes the difference

between activities characterizing competence/performance at the "mastery-level" and at the "foreman-level" is the "master's" ability to grasp a situation in a holistic, integrative way, while still differentiating alternative aspects and values. Where judgments are required, it is the ability to use relevant information, to be authorized to make clinical decisions as to patient care on the basis of diagnostic reasoning, and to be accountable for what is decided. Or put in another way: "...to decide, control and manage" within the area of competence.

10.1.2 Categories related to the model

In this section some generated categories will be discussed in relation to the model in Section 10.1.1. Pattern and order in observed situations giving rise to the categories thus are related to what constitute the changed goals for health care education when transferred to the system of higher education. The educational goals stated and outlined in the curriculum have in this study been discussed in terms of reaching professional proficiency by an emphasis on concepts such as holistic patient care and scientific awareness. Educational endeavors for developing and forming professional nursing practice are operationalized as stage movements or loops in the model's conceptual-thoughtful and emotive-human areas. The goals in the curriculum are to stress concepts which in the model could be found only at the highest levels of moral and logical reasoning.

From the categories THE WING-CLIPPED PERFORMANCE and THE NIL CURRICULUM the conclusion was drawn that the proficiency requested for work performance seldom included an autonomous responsibility to make judgments and decisions in identifying patient care related problems. These hallmarks of professional practice thus were almost never taken into account or demonstrated in educational situations. It was also concluded that activities which derived VALUE FROM UTILITY were identified as work relevant and easily mediated in educational situations.

While focusing on the highest levels of competence and performance, some issues have to be observed and considered. It has been questioned whether or not it is possible to formalize proficiency at a mastery level.

First, that the novice utilizes different procedural steps than does the master in problem solving activities is well known and has been closely examined within the nursing domain by Benner (1984). The master's context-guided activities in pattern recognition, judgments, and decision making are derived from an immediate and total grasp of a situation. The procedural steps taken are hard to reconstruct and are not predictable. Usually only a few steps are utilized and added to the master's prototypes, which means that for a novice the sequential order is broken. This kind of *intuitive knowledge* and proficiency (cf. Polanyi, 1967, "the tacit knowledge") is informed and is operating at a very high ability level. It is not to be confused with the concept of intuitive knowledge being uninformed hunches, blind guesses, or inconsidered beliefs.

Intuitive thinking and intuitive knowledge are by no means univocal concepts, and there have been several attempts to build theories within philosophy and psychology regarding intuition. The reason for mentioning intuitive knowledge here is that the concept is very close to what in the model is described as a "holistic grasp" - a function of integrated abilities for logical and moral reasoning.

Bruner, among many other researchers, has tried to analyze intuitive thinking. He has identified the ability to make inference from partial information as a central feature of the intuitive procedure - the sudden solution of a problem worked on for a period of time (Bruner, 1976). The Swedish philosopher Hans Larsson (<1892> 1920), is another individual for whom this issue has been a matter of concern. In Larsson's attempts to capture the concept, intuition is identified as knowledge of a "third order" - the final stage of scientific thinking. He describes how development from less ordered, discursive perception toward conceptual, logical, and abstract thinking suddenly, when it has reached its highest perfection, changes and becomes concrete - an *intuitive synthesis*. Larsson compares the moment of intuitive synthesis with the experience of studying the portrait-painter's stroke of the brush, when in the final phase he adds the dots to the eyes.

"The dot is the synthesis. Until it is added, our perception only allows us to see the different parts of the face separately. With the dots added, the painted face is totally changed and everything is integrated in the expression of the eyes". (Larsson, 1920 <my translation>)

Second, it has been assumed that Kohlberg's postconventional level of morality is not developmental, but achieved only by meta-ethical *reflection* (Gibbs, 1977). In the same way Krathwohl has questioned whether or not the fifth level outlined in his taxonomy can be reached educationally, since the personal *integration* which is required at this level is not attained until at least some years after completed formal education (Krathwohl, 1971).

Third, the highest levels of making clinical judgments and decisions in caring for the patient is characterized by *uncertainty*. Ethical and intellectual development has been described by Perry as movement from dualism (multiplicity, relativism) to commitment to relativism (Lammers, 1985). Discussing the quest for certainty, Dewey stressed that what concerns all of us as human beings is the "...greatest attainable security of values in concrete existence", and he points to our resistance to activities which provide insurance but not assurance (Dewey, <1929> 1980).

Statements like that are important to consider when discussing consequences for pedagogical practice within health care education. They give rise to questions such as: - whether the knowledge of the "connoisseur" (Eisner, 1979), the ability for "holistic grasp" and core recognition, the "tacit knowledge" (Polanyi, 1967) characterizing a true caring profession are intuitive, or are what Larsson labeled an "intuitive

synthesis" (Larsson, <1892> 1920) and the art of the profession and not an educational concern when experiences for stage movement have to be planned for and provided.

- whether or not the curriculum for higher education in health care thus is emphasizing goals in terms of abilities at levels out of reach for achievement within time available in clinical settings whatever the contextual and individual preconditions are.

Educational goals usually express the ideal state to strive toward, but do so in terms of abilities to be demonstrated by the end of educational efforts. Suggested means to reach the goals are not always sufficiently informative. For pedagogical practice in clinical settings to be efficient in preparing students for giving better patient care as professional nurses, it is important to make explicit what level of knowledge and skills is required for entry into professional practice. That is, how far is basic education supposed to take the students and what should be left for further and advanced education. Implicit standards will not facilitate the changing process.

Knowledge and skills in the observed educational situations were usually judged to be aquired mainly by experience and time. As a consequence, the status quo will remain if educational theories on development and formation are perceived as unimportant and the guiding competence is perceived to be innate.

In this study, the educational situations in Sweden have been observed in a phase of change. The process of change is lengthy, thus only the direction of change was expected to be captured in analyzing educational processes. In the specific clinical settings investigated, students were successfully educated and modeled into the role of the skillful nurse in accordance with general goals for *health care education*. The changed direction for education to mold students into the role of a professional nurse in accordance with goals stated for *higher health care education* was, with some exceptions, not noticed.

The absence, however, was interpreted as a need, and a need is defined as the recognition of a possibility.

10.1.3 Educational traps

Some of the categories were perceived to be properties of what was conceptualized as EDUCATIONAL TRAPS. These were reflected, for instance, in categories such as THE CAPRICIOUS ENDEAVOR, THE UTILITY VALUE, THE ADAPTING, ADOPTING, and SEARCHING STUDENT, THE WISH TO KNOW - THE COURAGE TO ASK: Dilemmas which students encountered in the clinical settings.

Meeting with instructing preceptors implied role modeling as part of the students' role

development. Role modeling is perceived as a means for cultivating young talents at a basic educational level, or as a means for change and renewal within the framework of an occupation; for movement toward the forefront of the profession; for leadership development; as a means for upward mobility; for one step on the career ladder. Role development is highly dependent on role modeling. Role models in clinical settings are key persons for the development of skilled nursing practice (Grahn, 1986, in press).

Guiding situations, in which role development takes place facilitated by preceptorial influence, offer opportunities for stage movements or single-loop and double-loop learning, as mentioned earlier. Guiding and facilitating the student's role development was, however, a mission for which the "guides" and "facilitators" were seldom educated, and a duty for which they were not paid. Suitability for the preceptor role was almost never a matter of concern in the observed situations. Excellence and poor performance in the working role and/or in the preceptor role were mixed.

Several conditions were identified as having an impact on how the situations were handled educationally. The features which, however, saturated preliminary codes and gave rise to categories such as THE CAPRICIOUS ENDEAVOR, THE UTILITY VALUE, and THE SEARCHING, ADAPTING, ADOPTING STUDENT were (1) the frequency with which students, with few exceptions, met with different staff members acting in the preceptor role; (2) the lack of assessing the student's learning readiness; and (3) the pattern of avoidance demonstrated by the preceptors in dealing with educational activities for achieving goals such as assessing the patients individual needs from a holistic point of view or challenging students by exposing them to scientifically-based nursing practice.

Avoidance and frequent change of preceptor indicated that the students were exposed to a highly contingent variety of actions focusing on the "here and now" in the short encounters and thus to a cascade of situation-specific, fragmented activities and information. As a consequence, educational continuity was uncontrolled, an element which constrained the opportunities for movement through stages in role development, and from changing "knowing how" to "knowing that". The amount of "here and now" knowledge and skill which had to be mediated concealed one trap.

Another trap students were caught in was discussed in the previous section. Meeting with the expert, the master, or the connoisseur was for the student a short interlude occurring by chance. When it happened the students had to face the paradox that the learning of highly skilled and complex nursing activities was too complex to be taught in a traditional way. Diagnostic reasoning is an example of that kind of expert skill which is implicitly conveyed and has to be recognized and caught by the students.

The well-known discrepancy of value-incongruity, gap, or clash between ideal and

real appeared in the study to be a question of failing in attempts to apply a standard design to a complex variety. This implied the nearness to another educational trap in which students became spectators without tools for grasping the variety in patient care settings. From that perspective, a discrepancy and tension existed.

To avoid these traps requires efforts in educational planning to answer the following questions:

- What does it take to overcome educational discontinuity which constrains the opportunities for movement through the stages in competence development?
- What does it take for a student to recognize the pattern of highly skilled nursing practice too complex to be traditionally taught and thus only implicitly mediated?
- What does it take for a student to obtain tools to grasp the context-dependent variety in patient care settings?
- How are staff members nimble reasoning in the ever changing situations demanding their judgment for action? What are their priorities, what norms, values, ideals, and assumptions regarding the cultural context are guiding their assessments and decisions in patient care?
- How could staff members (as preceptors) be enabled to share their process of reasoning with the student nurse in educational situations?

Considering these questions in the light of research questions on preconditions for change and consequences for pedagogical practice, the following answers are supported by the research findings.

First, the existing richness of knowledge embedded in the pattern of skilled nursing activities carried out in complex real life situations at radiation therapy departments has to be re-discovered and articulated (e.g., THE EMOTIVE STRENGTH IN CURSORY INTERPLAY) since it is one baseline for advancing the body of nursing knowledge.

The alpha and omega to enable preceptors to articulate and share the process of reasoning used to identify patient care related problems seems to be that these key persons for role development in the field of practice systematically become involved in the same kind of change and renewal as is outlined in the curriculum for basic nursing education. They must also become more aware of the impact of discontinuity on movement through the stages of role development and of what kind of tools students need for pattern recognition.

In terms of academic recognition of professional nursing practice and professional identity, the nature of autonomy and/or accountability for professional practice also needs to be more distinctly articulated (cf. THE WING-CLIPPED PERFORMANCE). For a practice discipline, the target of change and renewal is the world of work. The new dimensions of holistic care and scientific awareness will be recognized as *work relevant* if they are *articulated* and *recognized* by practitioners as having UTILITY VALUE. They can, thus, be more easily discussed, put to the fore, and mediated in educational situations in clinical settings.

The preceptor role would be facilitated by *standards* for professional nursing practice that make explicit the level for entry into practice, clarify what should be covered during the two years of education, and delineate what would be best covered by further education.

Second, what would make a difference is to discover and estimate the supporting tension hidden in the discrepancy, value-incongruity, gap, or clash between real and ideal and *to utilize* that tension as a *point of departure* for educational endeavors. Instead of coping with contingency in a fragmented way, using the richness in variety could be encouraged. Differences, similarities, and variety could be discovered, recognized, analyzed, verbalized, judged, etc. by the student guided by a selected staff member in the preceptor role.

Kohlberg (1981), drawing on Piaget and Dewey, stated that it is through experiences of discrepancy that cognitive development is stimulated. If the direction toward the goal is known it creates a tension. It is only if the direction is unknown that it will result in a stress situation. Separated but not unrelated, IDEAL and REAL, THEORY and PRACTICE in the nursing domain can be kept together by this magnetic tension of discrepancy while using the tension as a supporting mechanism to stimulate growth, change, and progress. As was mentioned in Section 2.2, it is not a gap to bridge, but a tension to utilize. What matters in patient care could not only be depicted, but the clinical setting could become the lung through which the school is breathing and turn the CAPRICIOUS ENDEAVOR into a crowning endeavor.

To avoid educational traps calls for

- clinical preceptors who are educated for the role and have time available for the mission,
- students who enter the clinical settings prepared for pattern recognition and armed with tools and time to grasp the variety,
- continuity of preceptor-student interaction in educational situations in clinical settings, and
- standards for professional nursing practice which are articulated and recognized by practitioners as being work relevant.

With regard to what is stated as aims for health care education within the system for higher education, the CAPRICIOUS ENDEAVORS otherwise will remain unchanged and nurses of tomorrow will "learn the lesson" through time and by trial and error. The ADAPTING, ADOPTING and SEARCHING STUDENTS will be guided merely by what "here and now" is judged to have UTILITY VALUE. THE EMOTIVE STRENGTH IN CURSORY INTERPLAY will remain underestimated and the patients' WISH TO KNOW and COURAGE TO ASK will cause ethical dilemmas. Without explicit standards for professional nursing practice related to accountability, professional identity is lost, performance will remain WING-CLIPPED, and the NIL-CURRICULUM will be conveyed in clinical settings. Nursing education will remain an excellent vocational training,

but not change toward a professional education. Students thus will continue to be caught in EDUCATIONAL TRAPS from which only years of experience will rescue them.

10.2 Generated grounded working hypotheses

In this study, ongoing activities in everyday educational situations have been brought to conceptual awareness. Using the grounded theory approach implies that the researcher is moving forward and back on an inductive (abductive)-deductive continuum throughout the different phases of the investigation. In concluding it seems appropriate to deduce and bring the theoretical abstractions which are empirically grounded and abductively generated back to the culture in which they were born and to do so by formulating some *working hypotheses* regarding educational situations.

The practice of making formal propositions is abjured by many grounded theorists. The propositions are usually implicitly embedded in the description and/or discussion. Reported in that way, they serve the purpose of mediating the feeling of an ever-developing theory. Grounded theory is theory viewed as process, and to state some findings in terms of hypotheses is to freeze the process. Rephrasing the findings in terms of hypotheses is, however, a simple formal exercise since the concepts are already stated in the coding procedure and/or in the discussion (Glaser & Strauss, 1979; Strauss, forthcoming).

Knowledge and understanding regarding the nature and meaning in educational endeavors has been gained by analyzing educational processes. When analyzing processes of human actions and when taking into account an understanding of their activities, the related variables in the hypotheses are expressed in terms of conditions and consequences. By identifying recurrent core features that were confirmed in similar and different contexts, activities characterizing educational situations in the clinical setting at radiation therapy departments have been delineated.

The working hypotheses are generated in educational situations in a specific clinical setting. What about the possibility of *generalizing* the findings? Are they limited to similar kinds of educational situations, that is, to situations within "high tech" patient care settings characterized as peak situations due to time restriction with short encounters between patients and staff members when the patient's emotional distress is presumed to be high? Similar kinds of situations could be found in outpatient departments, emergency rooms, intensive care units, etc.

The possibilities for making generalizations in the traditional way when using a naturalistic approach has been much discussed among eminent researchers during the last decade (e.g. Cronbach, 1975; Guba, 1978; Stake, 1978; Guba & Lincoln, 1981;

LeCompte & Goetz, 1982). There seems to be a consensus in perceiving the need to revise this concept since a generalization free from situational constraints and thus a context-free proposition is hardly applicable when the inquiry deals with human beings (Guba & Lincoln, 1985). The authors suggest that the concept of "generalization" be replaced by "fittingness". According to Cronbach (1975), generalizations decay rapidly over time. He argues that any generalization should be a working hypothesis and not a conclusion (cf. Section 4.2.1). When reaching the level of theory, the grounded theory is generated by comparing similarities and differences and exceptions and rules in different contexts. Variation thus is built into the theory and the generated core concept is applicable in different kinds of situations. The concept of looping in logical and moral reasoning (how far, in what direction), presented in this study, has the potential to be further developed to fit in different situations.

The hypotheses below thus *summarize*, in terms of conditions and consequences, what has been generated from process data and what has been concluded and discussed.

To facilitate change and renewal in accordance with stated goals for higher health care education in Sweden, the activities in educational situations in clinical "high tech" settings (where time available for interaction is limited and the patient's state of emotional distress is presumed to be high) having the potential to enable students to move toward professional proficiency are characterized by:

- * Guiding students into a professional role - a mission for which the key person (the preceptor) is educationally prepared.
- * Continuity in student/preceptor relations for competence and role development during a longer period of time.
- * Assessing the students' readiness for movement and change.
- * Being ruled by articulated and recognized standards for professional nursing practice.
- * Utilizing the tension built into the discrepancy between "how it ought to be" and "how it is".
- * Utilizing contingency in actual situations in the clinical setting as the point of departure for educational endeavors.
- * Recognizing and articulating the emotive strength in cursory interplay.
- * Preparing students for "single-loop" learning as well as for "double-loop" learning.
- * Training for nimble logical reasoning in patient care situations.
- * Emphasizing the utility value of research-based nursing practice.
- * Training for nimble moral reasoning in patient care situations.
- * Training for nimble logical and moral reasoning integrated into identifying patient/health care related problems.
- * Training for nimble pattern recognition (cf. "the wish to know and the courage to ask") in the rich variety of clinical practice.

* Exposing students to disequilibrium as a means for diagnostic reasoning.

Some of the relationships stated above are not turning the world upside-down. But bringing the well-known to conceptual awareness could make a difference. What is essential in this study is the contribution to building up the body of nursing knowledge by conceptualizing and putting into focus some of the educational traps and some of the potentials and limitations for knowledge advancement in educational situations in clinical settings. Clinical settings play a crucial role for change and renewal and, thus, for developing and advancing professional nursing practice.

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